AUGUST 5, 1933

Railway Age

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Untapped Reservoirs

LOCOMOTIVE operation has been revolutionized in the past five years. Accurate, scientific control of steam distribution now replaces former methods.

Railroads which have adopted this new development are saving 10% of road fuel on hundreds of locomotives in regular service.

The Loco Valve Pilot brings these savings within the reach of every railroad.

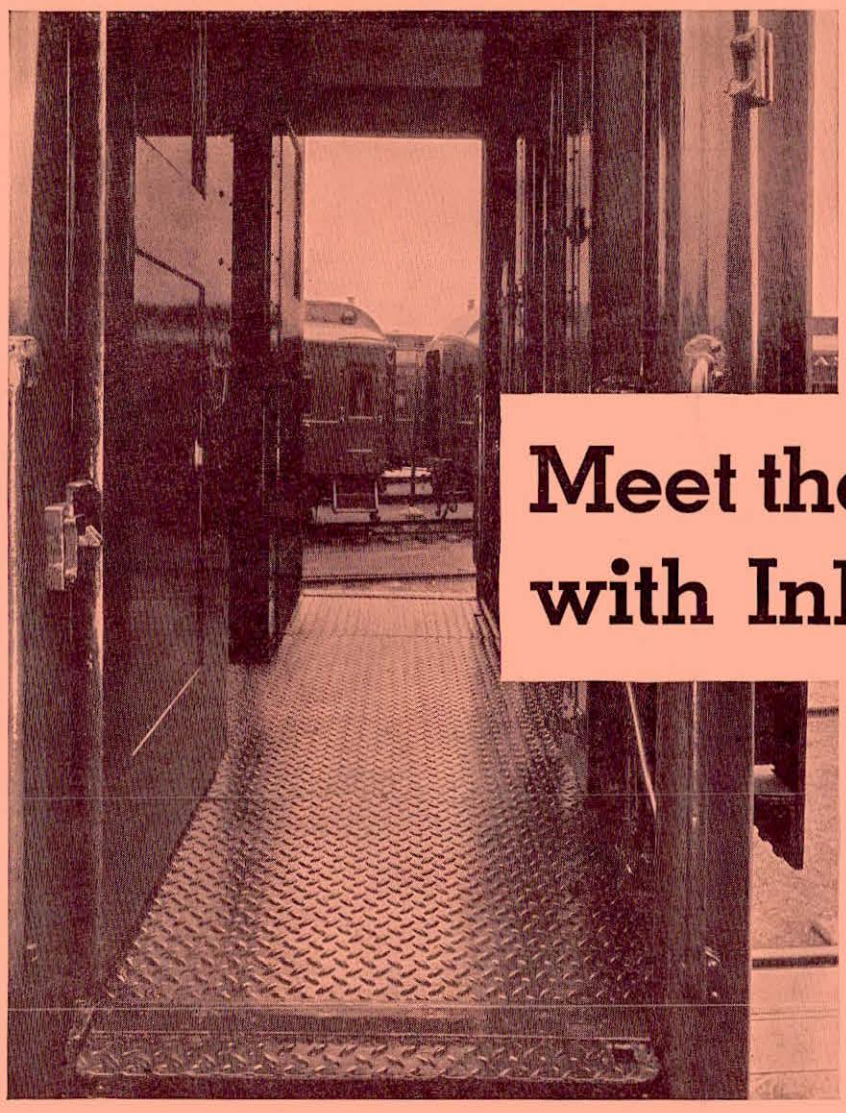
Convincing proof, the result of a study of years of actual locomotive operation, is found in "Locomotive Fuel Facts." May we send you a copy?

W. H. Beegwait.

President

VALVE PILOT CORPORATION

230 Park Avenue, New York, N. Y.



Meet the Obligation with Inland 4-Way Floor Plate

Inland 4-Way Floor Plate used in the vestibule of a Chicago & Northwestern Railway car

INSTALLING safety devices is an obligation — and good business. The only question is how to secure most safety—how to do the job right.

When it is a problem of traction for feet or wheels — car vestibules and steps, locomotive floors and runways, building floors, platforms, scales, and the like—Inland 4-Way Floor Plate (Pat. app. for) is the answer.

4-Way safety—equal traction in all directions—is assured by the exclusive 4-Way pattern. The projections center one another at right angles, and are higher in the center, providing secure-grip traction points.

Because of this pattern Inland Plate matches 4-ways—practically no waste in securing a continuous pattern. It drains and sweeps easily in any direction. And is the stiffest made because projections overlap, reinforce one another lengthwise as well as crosswise.

Start reducing the cost of accidents now by writing for complete information on Inland 4-Way Floor Plate. INLAND STEEL COMPANY, 38 So. Dearborn Street, Chicago, Illinois.

4-Way Safety

4-Way Matching

4-Way Drainage

Extra Stiffness

INLAND STEEL

ABLE SERVANT OF THE CENTRAL WEST

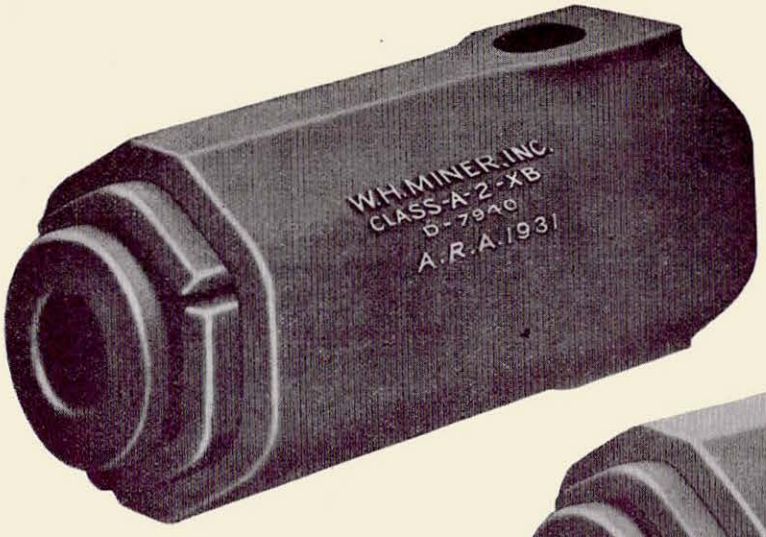
Sheets Strip Plates Bands Structurals Piling

Rails Track Accessories Bars Rivets Billets

Published weekly by Simmons-Boardman Publishing Company, 1309 Noble Street, Philadelphia, Pa. Entered as second class matter, January 4, 1933, at the Post Office at Philadelphia, Pa., under the act of March 3, 1879.

MINER FRICTION DRAFT GEARS

Miner Class A-2-XB Gear
Certified by
American Railway Association



Miner Class A-22-XB Gear
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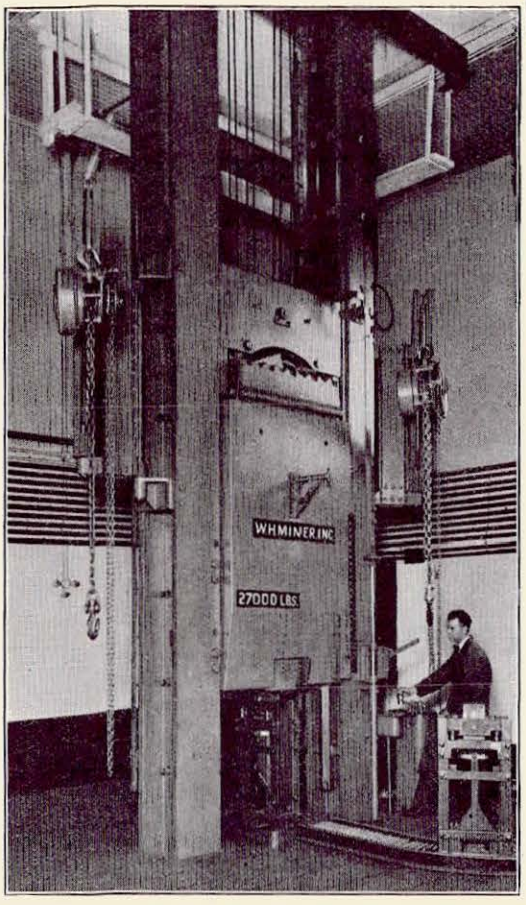
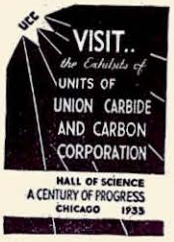
American Railway Association



Research is the fundamental reason for the success of these unrivaled shock absorbers.

The Miner Physical Laboratory has been in continuous operation since 1908 in the development of scientific draft gear information, and its work has been accurately coördinated with service research and tests.

W. H. MINER, INC. CHICAGO



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MAKES

LEAKPROOF PIPING

● An increasing number of railroads are specifying oxy-acetylene welded joints for steam, water, oil, and gas piping in shops, yards, and roundhouses. By doing so, they eliminate leakage and maintenance expense. Oxwelded piping is permanently tight, easy and inexpensive to install, and cheaper to insulate. An oxwelded joint lasts as long as the pipe itself. • The Oxweld Railroad Service Company, qualified by 20 years' experience, is assisting many operators in this work, just as it is helping them derive utmost efficiency and economy from all other welding and cutting by training employees in correct procedures, supervising their work, and supplying them with the best materials and facilities. • Year after year, the majority of Class I railroads find Oxweld Railroad Service of increasing value.

OXWELD RAILROAD SERVICE

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Unit of Union Carbide and Carbon Corporation

UCC

NEW YORK, Carbide and Carbon Building CHICAGO, Carbide and Carbon Building

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The Railway Age is a member of the Associated Business Papers (A. B. P.) and of the Audit Bureau of Circulations (A. B. C.)

Subscriptions, including 52 regular weekly issues, payable in advance and postage free; United States and possessions, 1 year $6.00, 2 years $10.00; Canada, including duty, 1 year $8.00, 2 years $14.00; foreign countries, 1 year $8.00, 2 years $14.00.

Single copies, 25 cents each.

Railway Age

With which are incorporated the Railway Review, the Railroad Gazette and the Railway Age-Gazette. Name registered U. S. Patent Office.

Vol. 95 August 5, 1933 No. 6

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Is Modern Equipment the Answer?..... 212

Fifth article in the Traffic Development Series discusses effect on traffic of adoption of improved seats, better lavatories, roller bearings and other refinements.

Railroads' Public Relations Policies..... 216

F. J. Lisman foresees government ownership at an early date unless the railway bestir themselves to adopt more vigorous publicity program—Suggests details of such a program.

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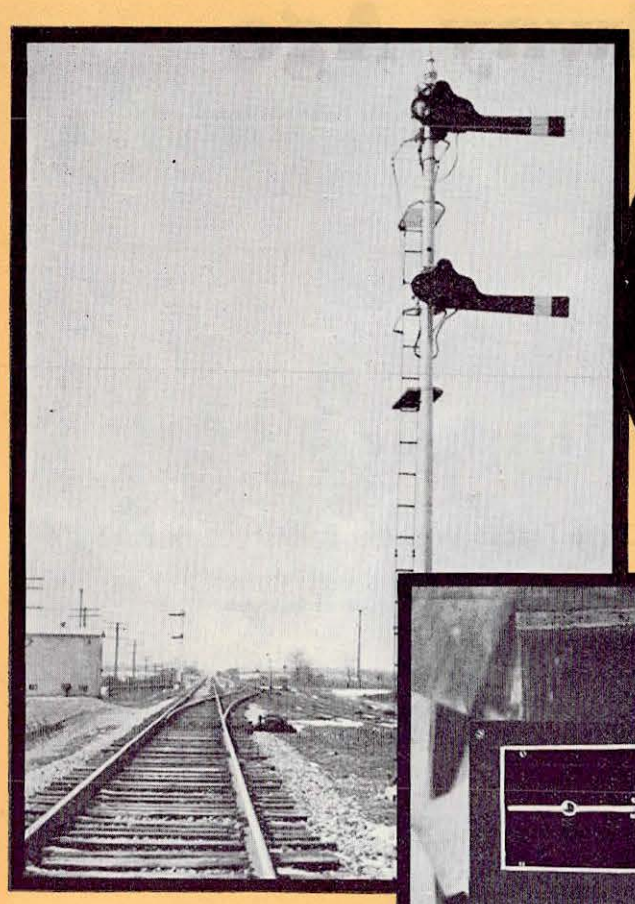

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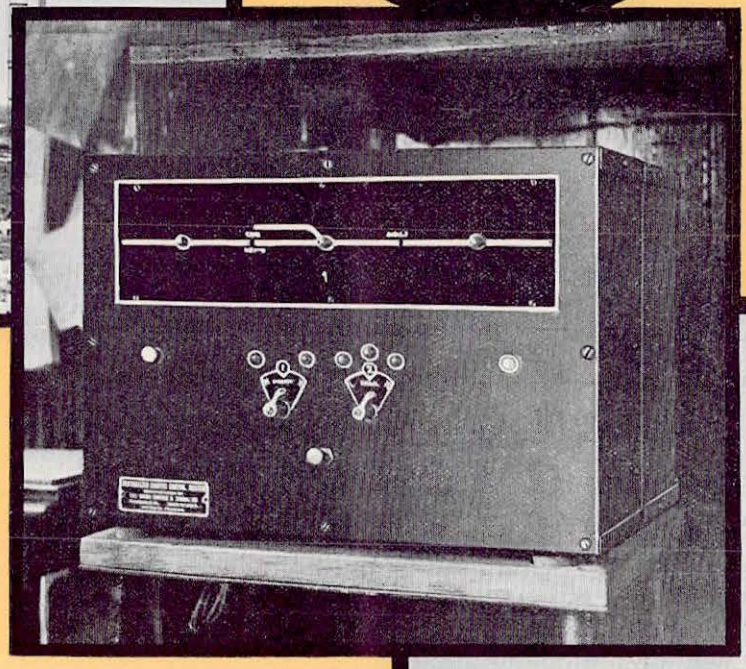
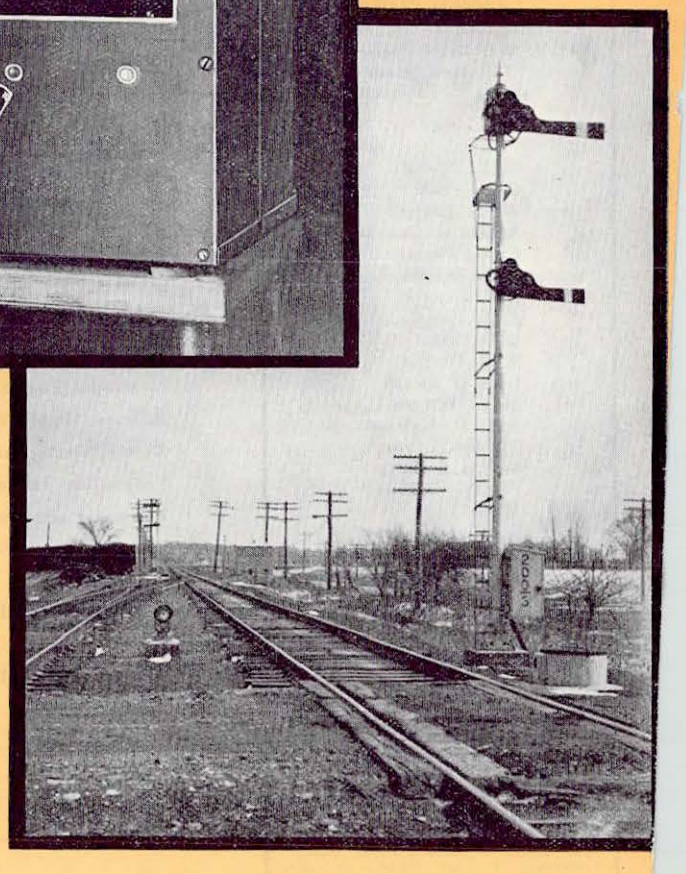




Upper: Power operated switch and signals at end of double track, 2.3 miles east of Peru, controlled remotely by a C. T. C. machine at Peru.

Center: Small portable two-lever table machine located in the operator's office at Peru, equipped with track model.

Lower: The old mechanical interlocking at East Peru Junction was removed. The new control system requires only two line wires between the Peru office and the power switch layout.

DISTRICT OFFICES

NEW YORK ◆ MONTREAL ◆ CHICAGO ◆ ST. LOUIS ◆ SAN FRANCISCO

The new switch machine is the "Union" Style M-22 with dual control.

A Return of 62.1% Annually

EAST of Peru, Ind., the Wabash replaced a mechanical interlocking plant at the end of double track, with power operated switch and signals, controlled remotely by a "Union" C. T. C. machine at Peru.

A saving was effected by the replacement which represents a return of 62.1 per cent on the investment of $8,296, the total cost of the changes.

There are many similar locations throughout the country where a small investment in C. T. C. will yield large returns. Savings, thus effected, are not dependent upon increases in traffic; *they begin immediately*.

As traffic continues to pick up, the bottle necks and congested spots on the divisions begin to cause concern. Right now is the time to provide for that even flow of traffic so desirable and so necessary to meet active competition.

Our engineers will be glad to cooperate in calculating the results to be accomplished by a proposed installation of "Union" C. T. C. Such results can be calculated quite definitely because the factors involved are known quantities.

1933
A CENTURY OF PROGRESS
CHICAGO
VISIT OUR EXHIBIT BOOTH N. GROUP 19. MEZZANINE FLOOR. TRAVEL & TRANSPORT BUILDING

Union Switch & Signal Co.
SWISSVALE, PA.

1881 1933

THREE STEPS TO LOWER OPERATING COSTS

FIRST

Scrap obsolete locomotives which are uneconomical to operate and maintain.

SECOND

Replace with modern locomotives and provide for systematic replacement—renewing the inventory at least once every twenty years.

THIRD

Use the new locomotives intensively to realize the greatest possible return before obsolescence robs them of their efficiency.

It takes Modern Locomotives to make money these days!

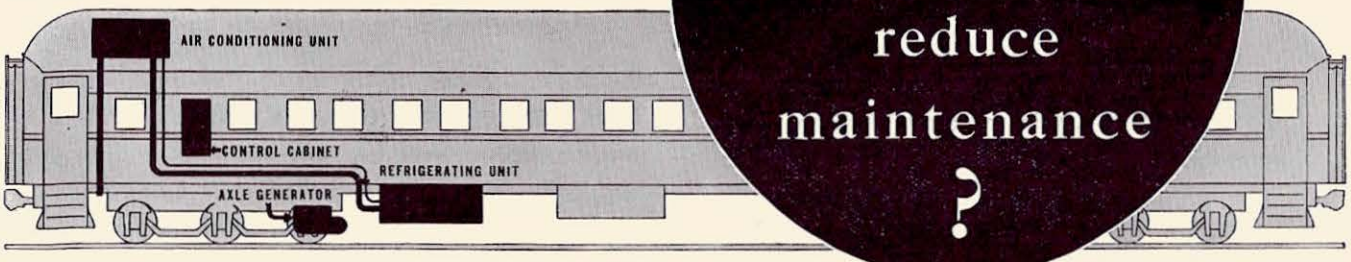
THE BALDWIN LOCOMOTIVE WORKS

PHILADELPHIA

BEFORE YOU BUY AIR CONDITIONING—

Ask this question

★ What features of design reduce maintenance ?



Westinghouse provides complete Air Conditioning Equipment, from rail to roof, that is easy to install.

WESTINGHOUSE equipment with its electric drive eliminates all belts, universal joints, clutches, and other mechanical complications which sooner or later create maintenance problems. Other features are:

1 High-speed, direct-connected compressor having forced lubrication.
2 Suspension-mounted refrigerating unit—every part easily accessible.
3 Axle generator and drive totally enclosed.
4 Gears run in a bath of oil.
5 100 per cent anti-friction bearings on generator and drive.
6 Lubrication required only once every 6 months.
7 Few moving parts.

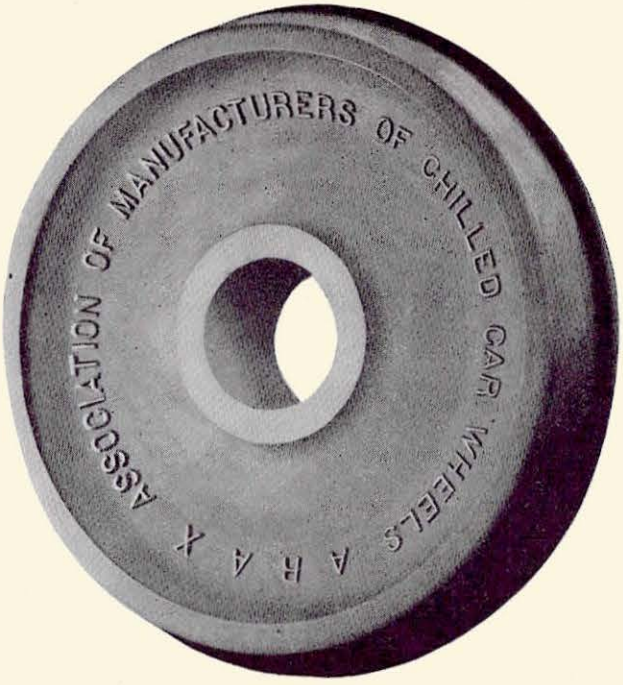
And what about operating costs? Operating experience indicates that the addition of one-third to one-half passenger per car per day will pay *all* the costs of operating this air conditioning system.

★ *One of a series of vital questions which should be asked by railroad officials and engineers before buying air conditioning equipment. A complete set of answers to these questions can be obtained by writing to Westinghouse Electric, Room 2-N, East Pittsburgh, Penna.*

Westinghouse T 79600

Quality workmanship guarantees every Westinghouse product

THE CHILLED CAR WHEEL POSSESSES DESIRABLE CHEMICAL AND PHYSICAL PROPERTIES



The CHILLED CAR WHEEL, from both a chemical and physical standpoint possesses inherent properties found in no other wheel.

Annealing practices followed by the manufacturers assure soft plates giving greater resistance to the thermal stresses developed by the most severe brake action and soft hubs which are easily bored and give minimum mounting cost.

The high combined carbon of chill of tread and flange produces a wearing surface capable of withstanding greater wear than any other metal. This hard polished surface has the effect of being self lubricating and creates minimum wear on the rail.

The chilled tread will not crush or flow under the heaviest loads. It is the hardest usable metal known. Yet the hubs are soft insuring a strong and perfect axle fit.

STANDARDIZE ON THE CHILLED CAR WHEEL

MEMBERSHIP

1. Albany Car Wheel Co.
2. American Car & Fdry. Co.
3. Bass Fdry. & Machine Co.
4. Canada Iron Foundries, Ltd.
5. Canadian Car & Fdry. Co.
6. Central Car Wheel Co.
7. Dickson Car Wheel Co.
8. Dominion Wheel & Fdries., Ltd.
9. Griffin Wheel Co.
10. Hannibal Car Wheel & Fdry. Co.
11. Lobdell Car Wheel Co.
12. Louisville Car Wheel & Ry. Sup. Co.
13. Marshall Car Wheel Co.
14. Maryland Car Wheel Co.
15. Mt. Vernon Car Wheel Mfg. Co.
16. New Orleans Car Wheel Co.
17. New York Car Wheel Co.
18. Pullman Car & Mfg. Corp.
19. Ramapo Fdry. & Wheel Works
20. Reading Car Wheel Co.
21. Southern Wheel Co.
22. Tredegar Iron Works

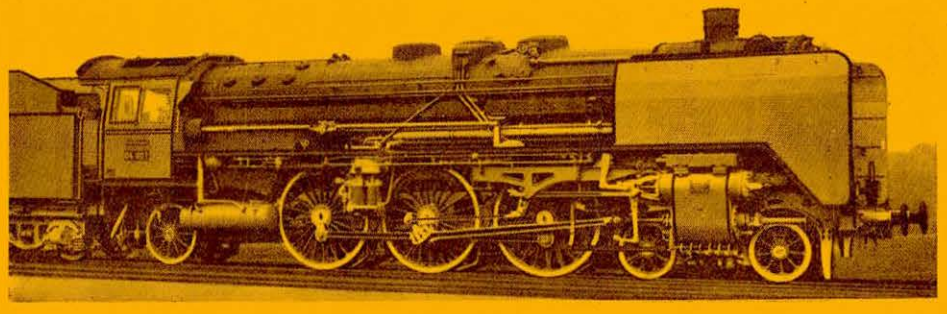
ASSOCIATION of MANUFACTURERS of CHILLED CAR WHEELS

332 SO. MICHIGAN AVE.

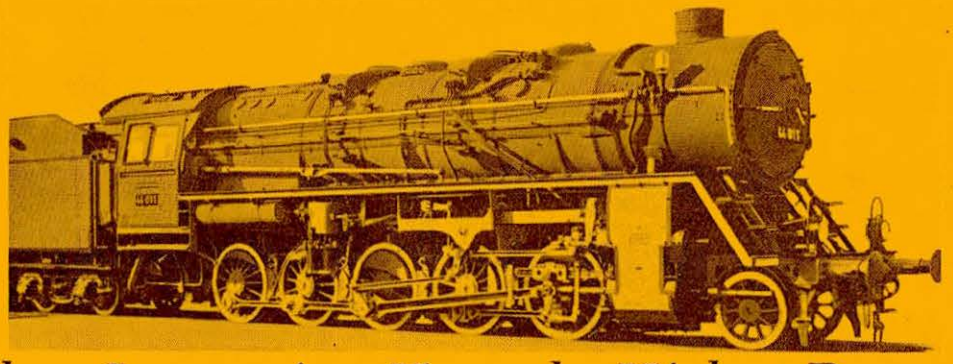
CHICAGO ILLINOIS

Nicholson Thermic
SYPHONS

An American Development Accepted for Economy by German Engineers In Their State Railways Locomotives



Steam Pressure---367 lbs.



These Locomotives Have the Highest Pressure Radial Stayed Boilers in the World

. . . Syphons were Installed for Fuel Economy, Improved Performance,

Reduced Maintenance and Positive Safety in Case of Low Water

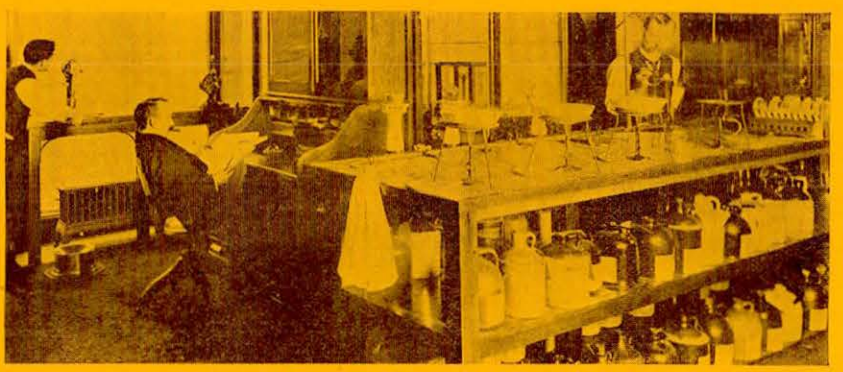
LOCOMOTIVE FIREBOX COMPANY
NEW YORK CHICAGO MONTREAL

Dearborn

TRADE MARK REGISTERED

"—until something better is put on the market"

Sept. 5, 1905



The Early Dearborn Laboratories

And Ever Since "Dearborn Gives the Best Satisfaction"

Twenty-eight years ago the following letter was written:

"For some little time we have been making a test of boiler compounds on the _____ Division, and it has developed that the compound made by the Dearborn Chemical Company, Chicago, gives the best satisfaction, and it has been decided to adopt it as our standard until something better is put on the market. I would be glad, therefore, if you will instruct all concerned on your district to see that the Dearborn Chemical Company's product is ordered in the future."

Yours truly,

_____G. S. M. P.

(name supplied upon request)

Today, Dearborn Treatment remains the standard for this railroad. Dearborn "gives the best satisfaction" as always. And just as locomotive efficiency has been improved by continuous research, so have Dearborn Methods. Comparison of the early Dearborn Laboratories shown above with the new, greater Dearborn Laboratories below offers in itself an explanation of why "Dearborn gives the best satisfaction."

Dearborn economies in correcting scale formation, foaming, pitting and corrosion are provable, reliable, substantial. Our many railroad customers accept them as part and parcel of efficient locomotive operation. "Use Dearborn until something better is put on the market" written many years ago was no challenge then nor is it now, for the "something better" has always come from the Dearborn Laboratories and Service Engineers, and Dearborn's position of leadership remains ours by right of "giving the best satisfaction".

Data is available. Tests will be conducted on your locomotives. All of Dearborn's experience is at your service.

DEARBORN CHEMICAL COMPANY

310 S. MICHIGAN AVENUE, CHICAGO 205 E. 42nd STREET, NEW YORK

CANADIAN OFFICE and FACTORY: TORONTO

Dearborn

TRADE MARK REGISTERED

CLEANERS

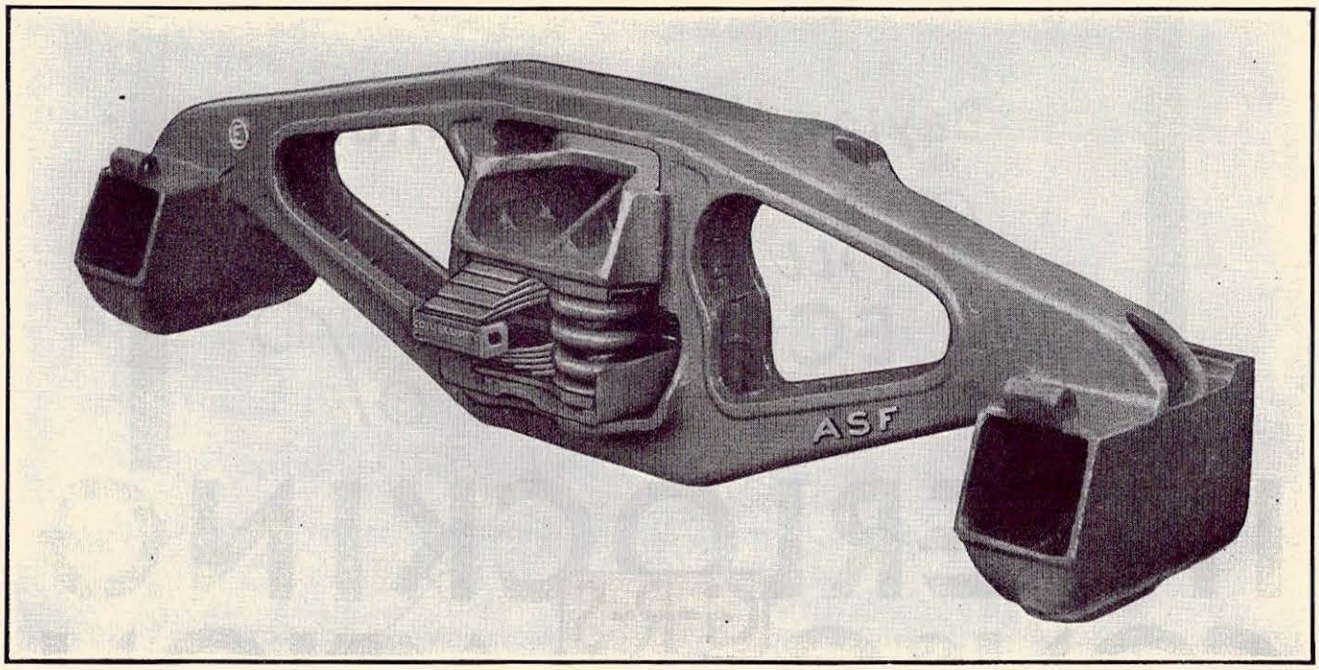
for the Full Range of Services

There are five Dearborn Cleaners used extensively in railroad service. They are of different strengths and are highly efficient in the uses recommended. Selection of the correct Dearborn Cleaner effects a saving in quantity and assures reliable results with a minimum of labor.

A Section of the New Greater Dearborn Laboratories

PUTTING MEN TO WORK

Not in years have the railroads had such a wonderful opportunity to modernize their rolling stock at so low a cost as they have today.



The rehabilitation of obsolete freight cars originally equipped with arch bar or inferior designs of trucks by the substitution of Integral Box Cast Steel Side Frames with the "COIL-ELLIPTIC" spring grouping will produce improvements that are justified by savings even on the present scale of operation.

The saving in maintenance expense, and the saving account of fewer claims for damaged lading, will in a few years, repay the additional expense of applying modern trucks.

Further benefits result from the well known fact that every purchase of new material increases the amount of traffic available for the railroads.

AMERICAN STEEL FOUNDRIES

NEW YORK CHICAGO ST. LOUIS

methods and practices that have long prevailed even in a small organization, and railroad organizations are among the very largest. The railroads have the further disadvantage of being managed principally by executives whose training and experience have not sufficiently familiarized them with the "selling" methods used by most other large industries to influence mass thinking and mass action, and, especially, by the automobile industry, now the railroads' principal competitor for public favor. Also, not to put too fine a point upon the matter, the expenditures made by the railways to influence public sentiment and legislation are subject to a governmental scrutiny and supervision to which those made by most other industries are not subject.

The Self-Interest of Various Classes

It is essential for the preservation of the railroads as a private industry that can so function as to promote the public interest that such facts as these shall be recognized by business men, public officials, railway employees and railway managers, and that the kind of action that they dictate shall be taken. No class of business men, including even those engaged in competition with the railways, should, in their own interest, promote government ownership of railways. Shippers would find government operation extravagant and government rates high, while other carriers would find that the government, as owner of the railways, would be far more disposed to handicap than favor the railways' competitors. Railway employees should favor legislation to establish fair conditions of competition for the railways and other carriers, because as long as present unfair conditions of competition exist they, as well as the owners of railway securities, will suffer severely from their effects. Railway managers should show unprecedented initiative and courage in readjusting railway facilities and service in accordance with present and future railway needs, and do and have done the work necessary to "sell" the railroads to the public, because, in spite of all the government trammels to which they are subject, railway managers still have the duties and responsibilities of management.

"Selling" the Railways to the Public

With reference specifically but broadly to "public relations" work, it is, as regards its objectives, roughly divisible into two parts. It is needed to help increase the patronage of railway passenger and freight service; and it is needed to help create a public sentiment favorable to equitable and constructive legislation regarding transportation.

The railways have lost a vast amount of their passenger traffic to buses and automobiles, especially the latter. If this competition is to be met at all effectively, radical changes must be made in railway service and rates, but if changed service and rates are to accomplish their purpose they must be supplemented and aided by more and better selling, including advertising. In large measure this selling, including advertising, should, in the interest of both economy and effectiveness, be done by the railways jointly, because their great problem is not to get travellers to use this or that railroad, but to use the railroads. It happens, also, that much that should be said cannot safely be said in the advertising of individual railways. For example, no individual railroad can afford to incur the hostility of automobile manufacturers by emphasizing the much greater hazards of traveling by motor than by rail, but they should be emphasized in advertising for all the railroads. A generation is growing up which is more familiar with automobile than rail transportation, and one of the most important tasks the railways should undertake jointly is to familiarize this generation with the attractions and advantages of travel by rail.

The railways usually have assumed that they had nothing to gain by advertising their freight service and rates. At a time when probably at least one-third of the country's freight is being transported by competing carriers, it seems reasonable to suggest that the railways should reconsider whether they should not advertise the lower costs and other advantages of shipping by rail.

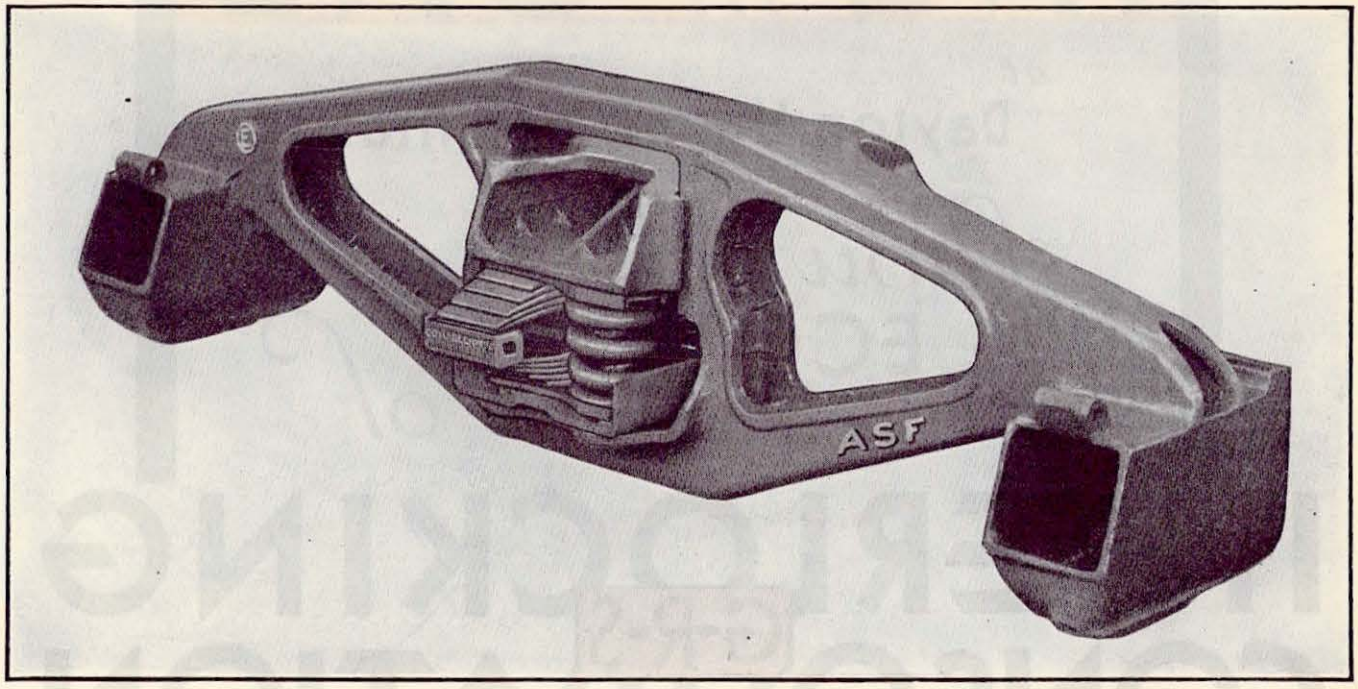
Public Relations Work and Legislation

As to legislation and regulation, this is still a democratic nation, despite some appearances to the contrary, and probably, in the long run, public sentiment will continue to determine government policies regarding transportation. The railways have done more intelligent and effective educational work than some of Mr. Lisman's comments indicate, but most of the leaders of the railroad industry never have understood this kind of work well enough or believed in it enough, and in consequence it has never been done intelligently, persistently and comprehensively enough. Almost every one of the nation's many millions of voters directly or indirectly exerts some influence on the relations between the government and the various means of transportation, and it is a huge and varied task to try to cause most of them to want to see the railways fairly treated. Probably the railways spend less in proportion to their total earnings for advertising and other kinds of sales and public relations work than any other large industry; and certainly experience and present conditions do not indicate that they have saved anything by so restricting their expenditures for these purposes. The automobile manufacturing industry is their principal competitor, and the fact that it spends more money for sales promotion and advertising than any other industry constantly places the railways at a great disadvantage in very obvious ways and for very obvious reasons.

The increases in railway gross and net earnings that are occurring are highly encouraging, but no student of the transportation problem should allow himself to be misled by them. The railways have a hard fight

PUTTING MEN TO WORK

Not in years have the railroads had such a wonderful opportunity to modernize their rolling stock at so low a cost as they have today.



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Further benefits result from the well known fact that every purchase of new material increases the amount of traffic available for the railroads.

AMERICAN STEEL FOUNDRIES

NEW YORK CHICAGO ST. LOUIS

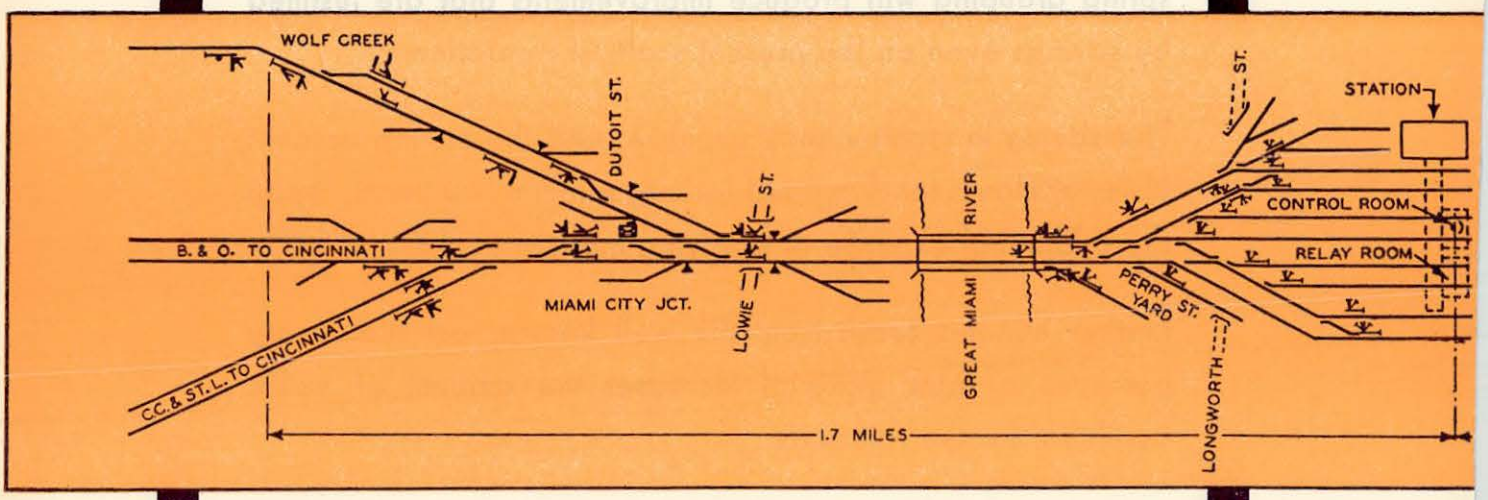
FIVE INTERLOCKINGS *in* ONE

at

Dayton Union Terminal

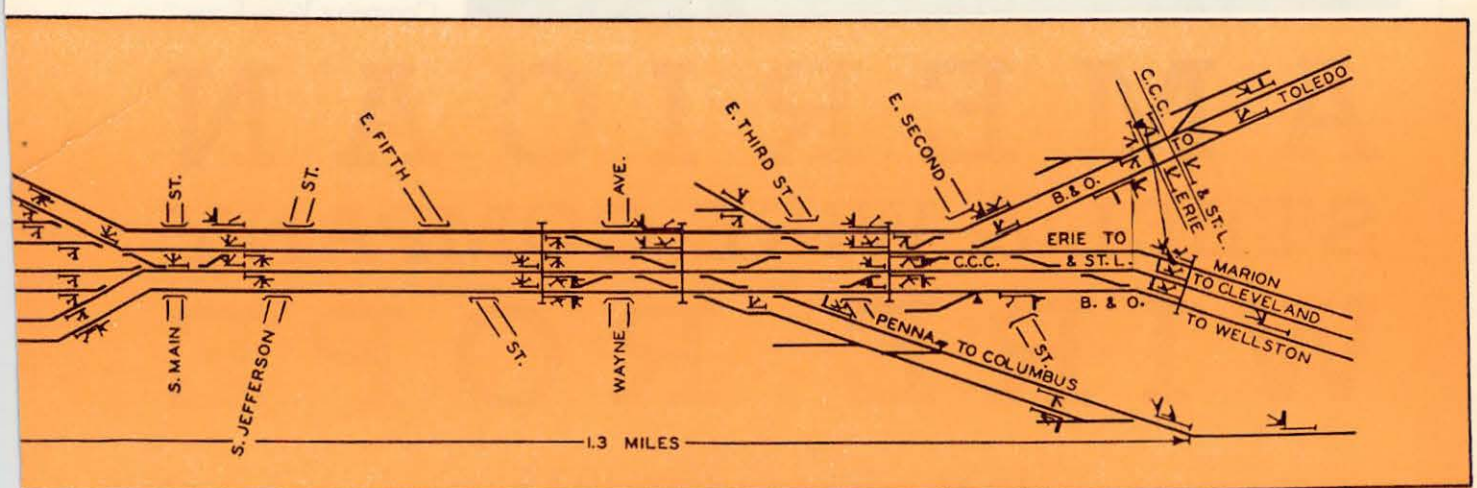
show ECONOMY *of*

INTERLOCKING G-R-S CONSOLIDATION



IN planning the new Dayton Union Terminal, the officials took advantage of the developments of modern signaling. Results —faster operation, big reduction in delays, large operating savings and a remarkably smooth operation throughout.

You probably have locations where large savings can be made and train operation improved. As we make studies without obligation, why not consult our nearest office?



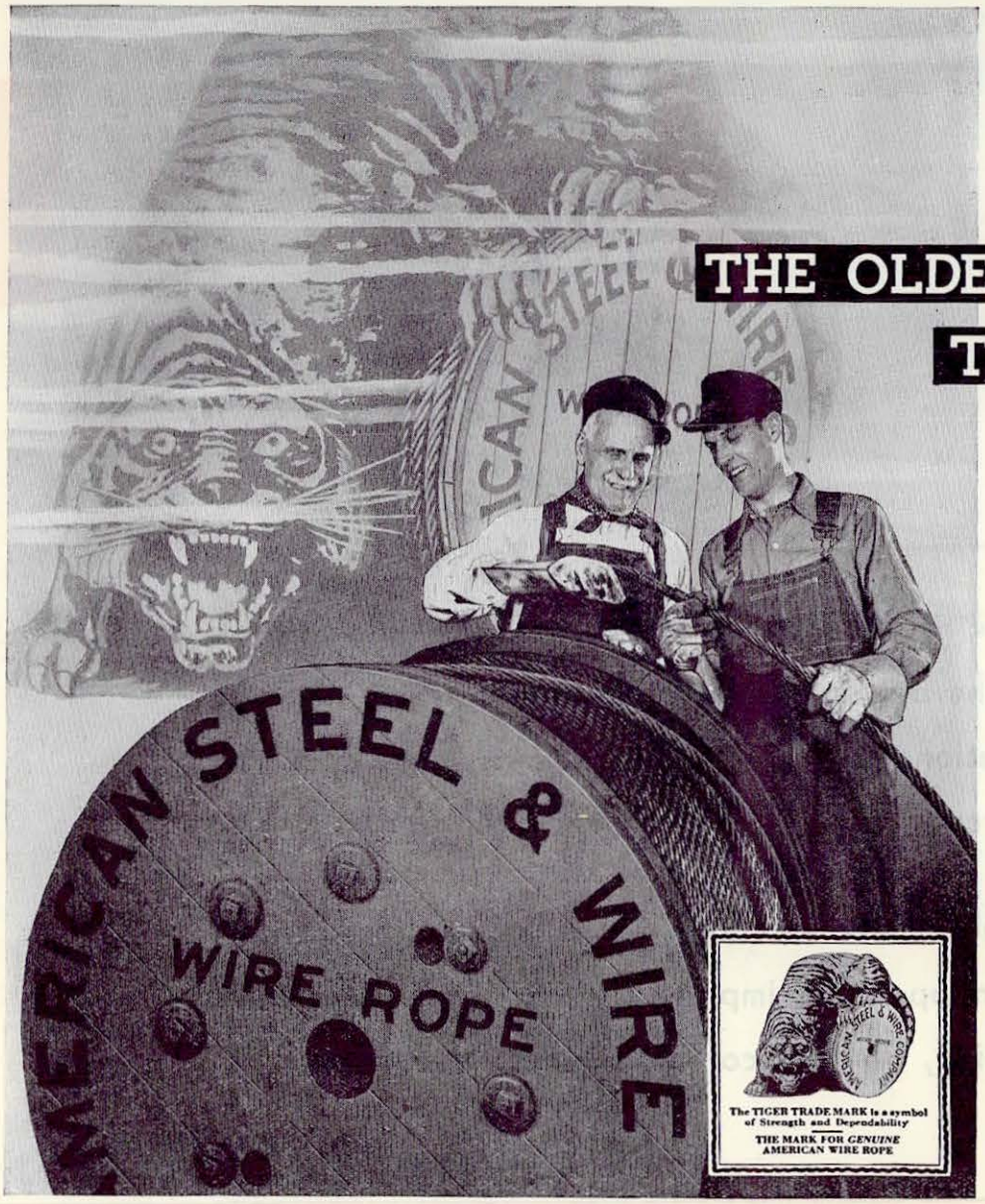
GENERAL RAILWAY SIGNAL COMPANY

ROCHESTER, N. Y.

New York Chicago St. Louis A-1165

Affiliated Companies' Offices: Montreal London Paris Tokyo Madrid Melbourne Calcutta Buenos Aires

WHAT'S BACK OF WIRE ROPE IS VITAL


AMERICAN STEEL & WIRE
WIRE ROPE
The TIGER TRADE MARK is a symbol of Strength and Dependability
THE MARK FOR GENUINE AMERICAN WIRE ROPE

THE OLDEST MEMBER TELLS WHY

WHY do I insist on American Steel & Wire Company Wire Rope? "Well—I have been here a long, long time—and it has been a part of my job to get the most out of every foot of rope we purchase. In the beginning we experimented quite a bit—trying this and trying that. But—it didn't take us long to find out that one brand cost us less to use—was always uniformly dependable—and stood up better under the hardest tests we could give it. On top of that we got real service whenever we needed it—and were always certain of getting exactly the right rope for the work it had to do. Take a tip from me—whether it's here, or anywhere else, you're bound to be right if you specify American Steel & Wire Company Wire Rope."

AMERICAN
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WIRE ROPE

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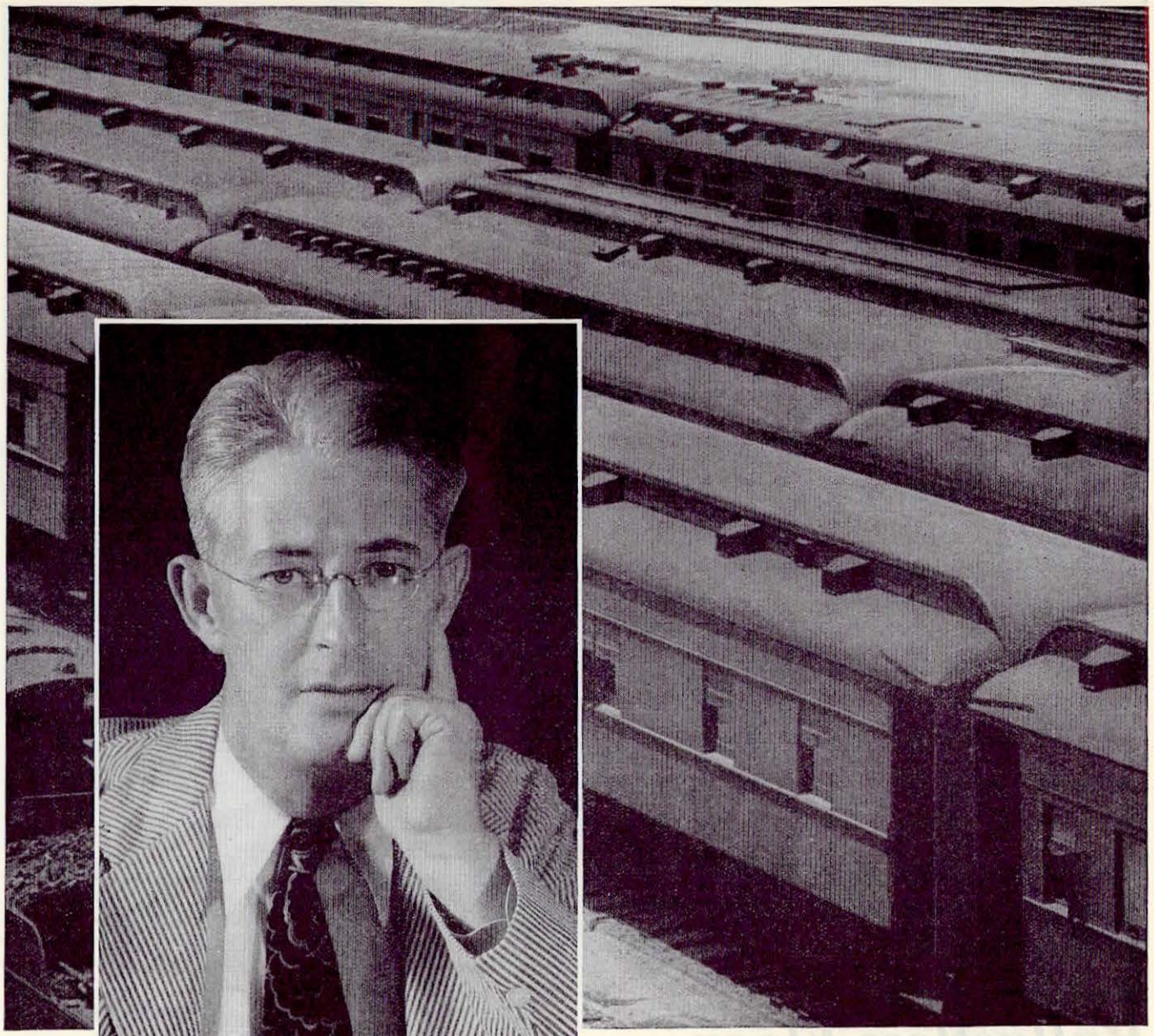

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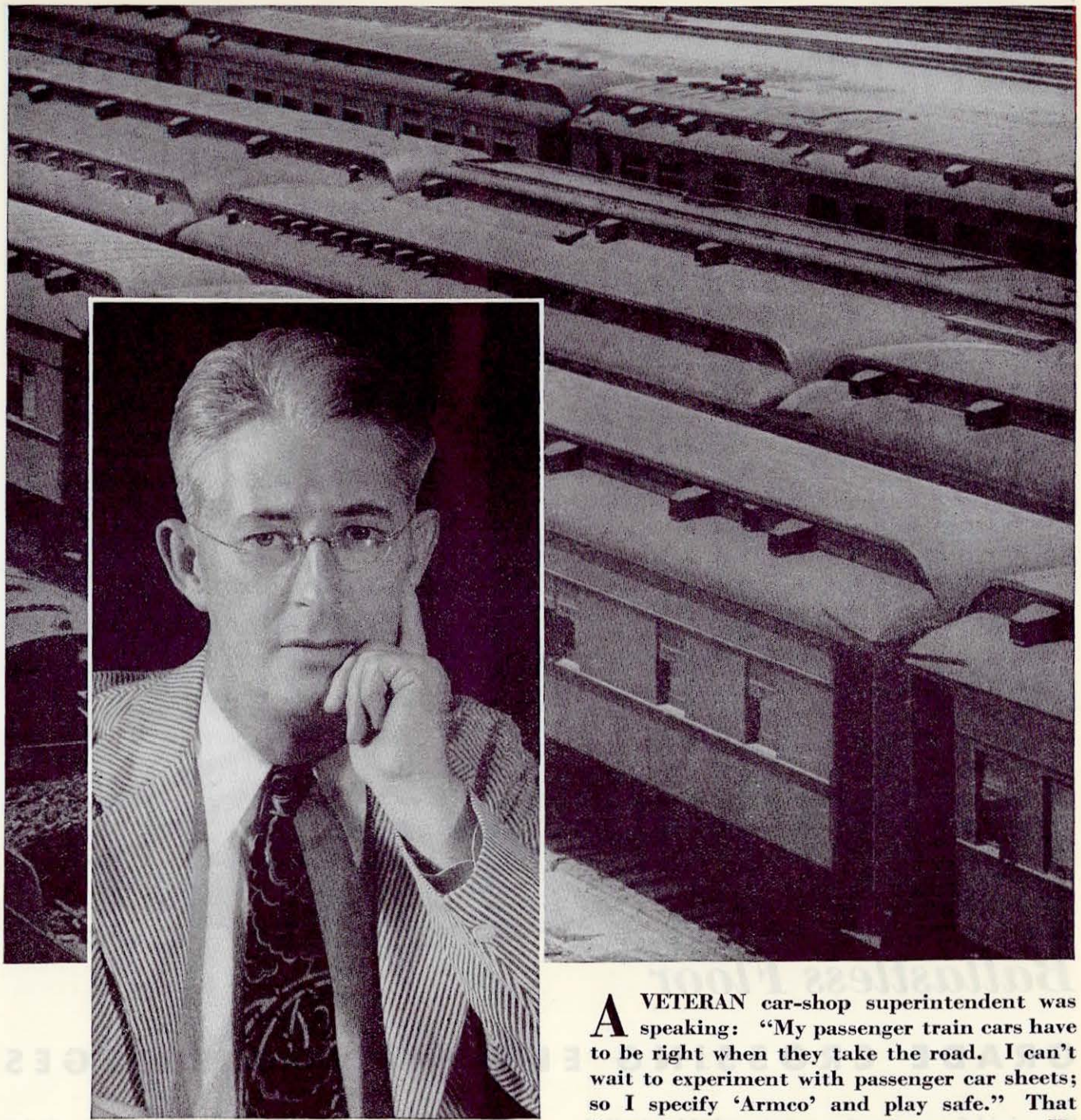

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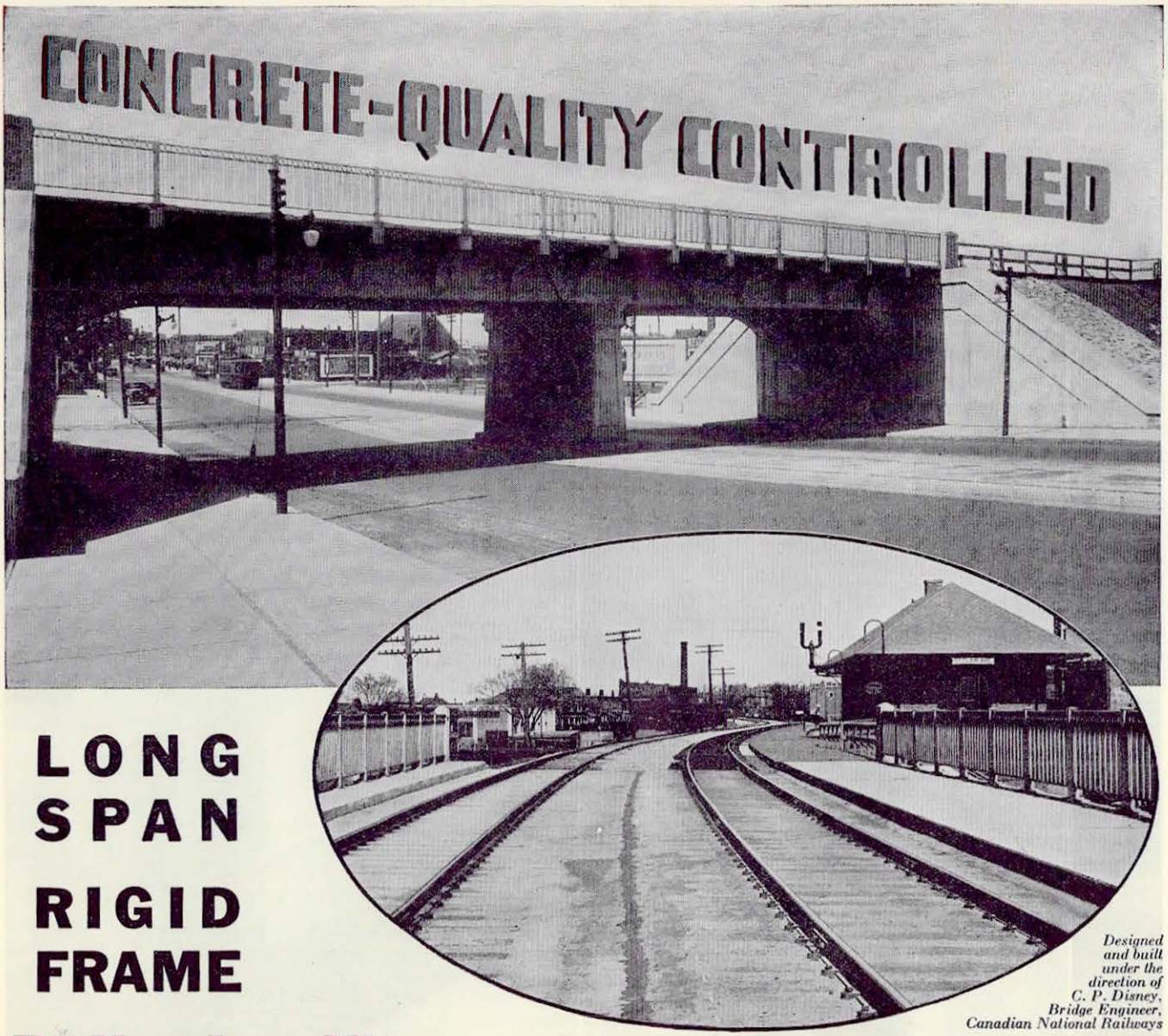

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Ballastless Floor

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The rigid frame continuous span bridge built by the Canadian National Railways at St. Clair Avenue, Toronto, has a clear span of nearly 50 feet from abutments to center pier. The abutments consist of a continuation of the slabs acting both as supports and retaining walls.

The super-elevation is obtained with pre-cast concrete ties, which are embedded in concrete.

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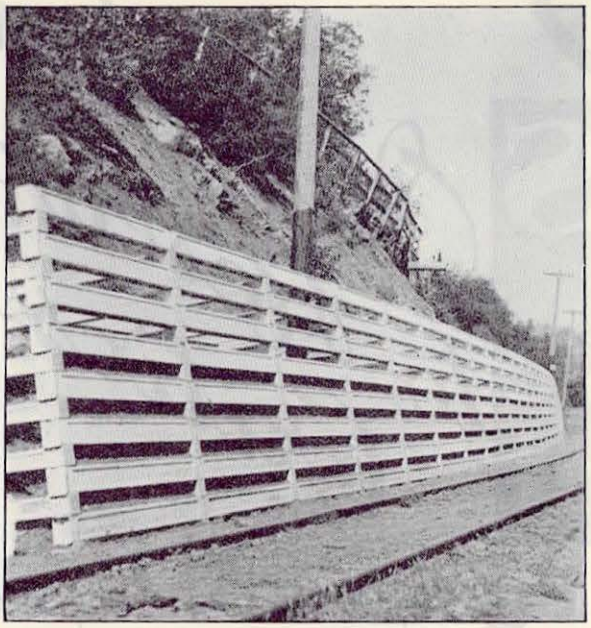

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Railway Public Relations Work

Although railway gross and net earnings are increasing, especially the latter, it is necessary to give much weight to other factors in making any intelligent appraisal of the important trends in railway affairs. The remarkable increases in net operating income occurring are due not only to the fact that freight car loadings increased from 19 per cent below the 1932 level in March, to 30 per cent above the 1932 level in July, but also to the fact that the railways have as yet only begun to make the large additions to their operating expenses for maintenance which they will have to make in order to put their properties into the condition required for safe operation and for satisfactory handling of an increasing traffic.

In addition to renewing adequate maintenance expenditures, which will tend to restrict the increase in their net operating income, they will have to raise a large amount of new capital if they are to provide the new kinds of equipment and other facilities required to enable them to meet outside competition while effecting economies in operation; and a net operating income largely in excess of fixed charges will have to be earned if the capital needed for such purposes is to be raised. Furthermore, comprehensive legislation dealing with the nation's transportation problem as a whole is to be recommended to Congress at its next session by Federal Co-ordinator Eastman and other government officials, either unitedly or severally, and the views of railway managements regarding the causes of existing transportation conditions and the government policies that should be adopted to improve them must be fully presented to government officials and the public if the legitimate interests of the railways are to be protected. This means that the railways should do an unusually large amount of intelligent "public relations" work from now until the new transportation legislation is enacted.

Is There Danger of Government Ownership?

An article by F. J. Lisman concerning the reasons why more railway public relations work is needed and the way it should be done is published elsewhere in this issue. The *Railway Age* does not agree with all Mr. Lisman says, but it is not necessary to agree with all he says to recognize the validity and importance of some of the points he makes. The dangers with which the railways, and in consequence their employees and security owners, the manufacturers for whom they afford a market, and the general public are confronted, are but too plain, and while the responsibility for reducing those dangers rests principally upon railway executives and the government officials charged with the duty of recommending legislation, it is shared by all who can contribute anything toward shaping the future policies of either the various transportation agencies or the government.

The *Railway Age* does not believe there is any serious danger of Congress passing legislation providing for government ownership of railways in the near future, or of such legislation being recommended by Co-ordinator Eastman or other government officials. The real danger, in our opinion, is that there will be failure to meet squarely and grapple firmly with the issues presented by existing transportation policies, with the result of not remedying the conditions largely caused by these policies and of prolonging the existing chaos in transportation, and thereby injuring all directly concerned, and the public most of all. Government ownership of railways probably would be the final outcome of such failure, because its adoption always has been much more likely to be the result of hasty governmental action to deal with a railroad emergency created by previous unfairness or inaction, than a deliberate decision reached by the people, after full discussion, that they want government ownership.

Disadvantages of the Railways

The railways are now subject to the competition of carriers by highway and water that have the advantages of government subsidization, comparative lack of regulation, and low wages and long working hours of employees, and naturally these carriers are anxious to retain these advantages. The railways for many years had little competition to meet excepting between themselves, and are hampered by facilities, operating methods and methods of salesmanship which they developed to meet the competition of one another, and which can be readjusted to meet new conditions and the competition of other carriers only by large expenditures for new facilities and the adoption of many new methods and practices. Only those who have not had the experience realize how difficult it is to change the

methods and practices that have long prevailed even in a small organization, and railroad organizations are among the very largest. The railroads have the further disadvantage of being managed principally by executives whose training and experience have not sufficiently familiarized them with the "selling" methods used by most other large industries to influence mass thinking and mass action, and, especially, by the automobile industry, now the railroads' principal competitor for public favor. Also, not to put too fine a point upon the matter, the expenditures made by the railways to influence public sentiment and legislation are subject to a governmental scrutiny and supervision to which those made by most other industries are not subject.

The Self-Interest of Various Classes

It is essential for the preservation of the railroads as a private industry that can so function as to promote the public interest that such facts as these shall be recognized by business men, public officials, railway employees and railway managers, and that the kind of action that they dictate shall be taken. No class of business men, including even those engaged in competition with the railways, should, in their own interest, promote government ownership of railways. Shippers would find government operation extravagant and government rates high, while other carriers would find that the government, as owner of the railways, would be far more disposed to handicap than favor the railways' competitors. Railway employees should favor legislation to establish fair conditions of competition for the railways and other carriers, because as long as present unfair conditions of competition exist they, as well as the owners of railway securities, will suffer severely from their effects. Railway managers should show unprecedented initiative and courage in readjusting railway facilities and service in accordance with present and future railway needs, and do and have done the work necessary to "sell" the railroads to the public, because, in spite of all the government trammels to which they are subject, railway managers still have the duties and responsibilities of management.

"Selling" the Railways to the Public

With reference specifically but broadly to "public relations" work, it is, as regards its objectives, roughly divisible into two parts. It is needed to help increase the patronage of railway passenger and freight service; and it is needed to help create a public sentiment favorable to equitable and constructive legislation regarding transportation.

The railways have lost a vast amount of their passenger traffic to buses and automobiles, especially the latter. If this competition is to be met at all effectively, radical changes must be made in railway service and rates, but if changed service and rates are to accomplish their purpose they must be supplemented and aided by more and better selling, including advertising. In large measure this selling, including advertising, should, in the interest of both economy and effectiveness, be done by the railways jointly, because their great problem is not to get travellers to use this or that railroad, but to use the railroads. It happens, also, that much that should be said cannot safely be said in the advertising of individual railways. For example, no individual railroad can afford to incur the hostility of automobile manufacturers by emphasizing the much greater hazards of traveling by motor than by rail, but they should be emphasized in advertising for all the railroads. A generation is growing up which is more familiar with automobile than rail transportation, and one of the most important tasks the railways should undertake jointly is to familiarize this generation with the attractions and advantages of travel by rail.

The railways usually have assumed that they had nothing to gain by advertising their freight service and rates. At a time when probably at least one-third of the country's freight is being transported by competing carriers, it seems reasonable to suggest that the railways should reconsider whether they should not advertise the lower costs and other advantages of shipping by rail.

Public Relations Work and Legislation

As to legislation and regulation, this is still a democratic nation, despite some appearances to the contrary, and probably, in the long run, public sentiment will continue to determine government policies regarding transportation. The railways have done more intelligent and effective educational work than some of Mr. Lisman's comments indicate, but most of the leaders of the railroad industry never have understood this kind of work well enough or believed in it enough, and in consequence it has never been done intelligently, persistently and comprehensively enough. Almost every one of the nation's many millions of voters directly or indirectly exerts some influence on the relations between the government and the various means of transportation, and it is a huge and varied task to try to cause most of them to want to see the railways fairly treated. Probably the railways spend less in proportion to their total earnings for advertising and other kinds of sales and public relations work than any other large industry; and certainly experience and present conditions do not indicate that they have saved anything by so restricting their expenditures for these purposes. The automobile manufacturing industry is their principal competitor, and the fact that it spends more money for sales promotion and advertising than any other industry constantly places the railways at a great disadvantage in very obvious ways and for very obvious reasons.

The increases in railway gross and net earnings that are occurring are highly encouraging, but no student of the transportation problem should allow himself to be misled by them. The railways have a hard fight

ahead of them to meet the competition of other carriers. They have a hard fight ahead of them to get fair regulation. In other words, they have a hard fight ahead to reestablish their earning capacity and credit; and they may have a hard fight to avoid government ownership. Their managements can win these fights only by showing a united front and great initiative, resourcefulness, courage and public spirit.

The Bus Operators' Complaint

The National Association of Motor Bus Operators has protested to the National Recovery Administration against the proposal of the Southern Railway to reduce its fares in coaches to 1½ cents a mile. Such a rate, the bus operators argue, is non-compensatory and will expose them to unfair competition. A similar disposition on the part of bus operators to complain at railway excursion fares which they are unable to meet has been shown in the past, and, in filing a proposed code for their industry with the National Recovery Administration last week, they protested that railroad passenger business was being conducted at rates "unstable and unfair from a competitive standpoint and without relation to required revenues to meet operating expenses and taxes."

The bus operators fail to recognize, apparently, that, given a sufficiently large number of passengers per train, the railroads can haul passengers at rates which they cannot hope to meet. It is only where traffic is available by the handful rather than wholesale that the bus offers economic advantages superior to the railways.

Meantime, however, the railroads have been giving a nation-wide transportation service and have, following their conception of their duty to the public, maintained service to many places the traffic of which could not justify the expense. To compensate themselves in some measure for the losses sustained in maintaining such service, the rate level in general has been maintained relatively high, which has enabled bus operators, aided by the lower wages of their employees, to enter territory where traffic is available in heavy trainloads, and thus to get business which, economically, should be moved by rail.

Low excursion rates and the low coach fare of the Southern Railway do not, therefore, constitute unfair competition with bus transportation, but are rather a reassertion by the railroads of superiority in the field of mass transportation where their economic advantages are plain. If the bus operators wish to attack railroad practices with regard to passenger traffic, we believe they would be on safer ground, economically, to question some of the train services the railroads are providing in remote areas where traffic is so scarce that a good bus load is all that is available, regardless of the rate. In such situations the bus is superior to the train and the railroads could save money by relinquishing the traffic. To find fault with the railroads for going out for business where it may be available in trainloads of a hundred or more passengers, which plainly is the goal of any fare of 1 cent or so a mile, is to ignore the comparative economics of the two forms of transportation.

In one other particular, we believe, the bus operators are on shaky ground in their attack on the railways; that is in their failure to propose in the code they have filed with the National Recovery Administration wages and working conditions for their employees which would approximate those of passenger transportation employees on the railroads. The bus operators have proposed a 54-hour average week and $15 minimum wages, whereas in railroad passenger transportation service in April the lowest paid class of employees worked an average of 31 hours per week and received over $29 in compensation (exclusive of a small amount of overtime paid for at penalty rates). In view of this comparison can the intercity bus operators seriously contend that their proposed wage schedule does not involve unfair competition with the railways and railway labor?

More Interest In Concrete Bridges

Reinforced concrete has been used in grade separation structures over streets and highways for about 30 years, but it was only after a decade during which its application was limited to a few railways in the middle west that the advantages of this material for such structures gained general recognition. For a long time the construction of reinforced concrete bridges was confined primarily to locations permitting limited span lengths. Because of the design commonly used, embracing simple span slabs reinforced only for tension, the designer was confronted with excessive slab depths in dealing with spans appreciably in excess of 20 ft.

A marked step forward was made when the Delaware, Lackawanna & Western introduced flat-slab construction, which had been employed previously only in building work. But, on the whole, designing practices as applied to grade separation structures continued on an exceedingly conservative plane until recently. Now, however, the wider use of the girderless flat-slab and structures continuous over several spans, the introduction of the fixed frame, the application of compressive reinforcement, and, to a minor extent, the adoption of higher designing stresses permissible with higher strength concrete, are opening a greatly expanded field for the economical and advantageous use

of reinforced concrete in railway grade separation structures.

The objective in all of these advances in designing practices is the reduction in the thickness of the slab required for a given length of span. The least of the advantages of the thin slab is its improved appearance and the saving in the cost of structural materials. While desirable, these alone would not justify the improved design in many cases, but the amount of grading, usually dependent on the floor thickness, is a factor which may assume large importance. This is evidenced in one of the bridges constructed recently by the Lackawanna in the elimination of grade crossings at Elmira, N. Y. Here, as will be shown in an article scheduled for a later issue, with the depth of street depression definitely limited, every inch of raise in the tracks entailed approximately 6,000 cu. yd. of additional grading in an adjacent yard. By discarding the design first considered, embracing a one-way slab continuous over a center support in favor of a girderless flat-slab design utilizing four-way reinforcing, the slab thickness was reduced from 3 ft. 6 in. to 2 ft. 3 in., a difference of 15 in., which, in turn, reduced the amount of grading necessary by approximately 100,000 cu. yd. This is of course not a typical case, but it is almost invariably true that the thinner the slab, the smaller the amount of railroad or street grading and the more favorable the railroad and/or street grades.

Large savings through the ingenious design of concrete bridges could be cited on a number of roads, but outstanding among these appear to be those effected by the Canadian National, the Central region of which has constructed a number of noteworthy reinforced concrete structures with shallow slabs. In some cases this road has gone a step further than others in minimizing the over-all thickness of concrete bridge decks by eliminating ballast and anchoring the track rails directly to the slabs or to concrete ties laid directly on the slabs. Several bridges incorporating this feature were described in the *Railway Age* of September 10, 1932, and two more such bridges are described in this issue. These latter bridges are unusual, also, in that they embrace the use of precast reinforced concrete slabs continuous over a center pier. One, with slabs 53 ft. 6 in. long and only 24 in. thick from base of rail, provides clear openings of 17 ft. 3 in. and 23 ft., while the other bridge, with slabs 58 ft. 10 in. long and only 30 in. deep from base of rail, provides two clear openings of 24 ft. Of further interest, both of these bridges were erected and put in service without interference with trains, the complete erection of one of them requiring only 2 hr. 10 min.

Some of the more recent developments in reinforced concrete bridge design for railroad loadings would have appeared impractical, if not fantastic, a few years ago. Some of these developments may not have fully demonstrated their practicability to the present time, but, taken as a whole, they are expressive of the initiative and ingenuity which are now being applied to reinforced concrete for grade separation structures. With the large economies possible through improved design, both directly and indirectly, progress should be continued, and with greater interest among an increasing number of those responsible on the railways for bridge construction.

Concerning Large Salaries

The payment of large salaries to the chief executive officers of large railroads is justifiable, because otherwise men of ability equal to the requirements of successful railroad management cannot be secured. The compensation paid, however, should be in proportion to the importance of the railways paying them and to the demonstrated ability and value of the services rendered by those receiving them.

The Interstate Commerce Commission has presented a statement of facts and an inquiry to the receivers of the Wabash which have significance in this connection. It states that the late W. H. Williams in 1930 received about $84,000 as salary as chairman of the Wabash and $100,000 from this road for special services, and in addition about $61,000 in salaries as chairman of other roads, a total of almost $245,000. It also cites figures regarding extraordinary compensation received by him from the Wabash and its subsidiaries in 1931, and asks the receivers of the Wabash what they are doing or contemplate doing "toward recovering any part of these extraordinary disbursements from those who authorized the payments or from the beneficiaries thereof."

It would appear, from the facts presented, that in 1930 Mr. Williams received the largest aggregate compensation paid any railway officer in the country. It is difficult to say what any man's services are worth, but the amounts paid to other men for doing similar work are one measure of their value, and measured by that standard no justification of the compensation given to Mr. Williams can be offered if the facts are as stated by the Commission. He had none of the qualities of a great railway executive, excepting industry, and consequently had no record of achievement proportionate to the payments made to him. Numerous executives rendered more valuable services to their railroads and to the railroad industry for much less than one-half as much.

The railroads are under constant scrutiny by the government and public, and publicity for every abuse in the conduct of any of them does harm to all of them. Their directors share with their executive officers the responsibility for every abuse in their management and for the effects produced by every disclosure of an abuse. The directors who authorized the payments made to Mr. Williams, must, therefore, be held morally responsible for having done a real injury to the entire railroad industry.

Long Precast Bridge Slabs Carry Tracks Without Ballast

Most recent development in reinforced concrete structures on the Canadian National offers structural and erection advantages

THE Central region of the Canadian National has recently completed two single-track bridges over street crossings that involve precast reinforced slabs of unusual length and thickness, continuous over a center pier. These bridges are of interest not alone because of their size and the structural and other advantages which they demonstrate, but also because they incorporate a recent development on the Canadian National in which track ballast is eliminated entirely and the rails are set directly on oak cushion strips flush with the top surface

St. George Bridge—11 a.m.—The Falsework Out and About Ready to Set in Slabs

of the deck slab. In addition, both bridges, while simple, are pleasing in appearance, having paneled faces, and one of them carrying bracket-supported walkways with iron railings.

One of the bridges was constructed at Sherbrooke, Que., over an extension of St. Francois street, while the other was constructed near St. George, Ont., replacing an old short girder bridge in a slightly different position over an important highway. Construction involved no important grade or line changes of the railroad or of the roadway, so that interest attaches solely to the bridge construction.

Thin Slabs Carry Track Without Ballast

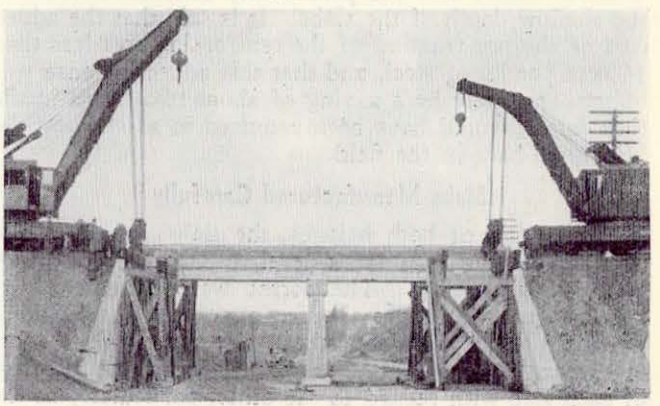
The bridges are essentially similar, consisting of two precast reinforced flat slabs placed side by side continuous over a pier in the center of the street and supported at the ends on mass-type abutments with such wing and supplementary retaining walls as were required. The Sherbrooke deck, however, as already mentioned, has two side walkways, which are carried on reinforced concrete brackets cast integral with the deck slabs.

At Sherbrooke, the slabs have an over-all length of 53 ft. 6 in., providing an opening of 45 ft. between abutment faces. This opening is occupied by two roadways, separated by the center pier, one 17 ft. 3 in. wide and the other 18 ft. wide, in addition to a 5-ft. sidewalk along the outer edge of the wider roadway. At the crossing near St. George, the deck slabs have an over-all length of 58 ft. 10 in., providing an opening of 52 ft. between abutments, which is occupied by the center pier, two 20-ft. roadways and two 4-ft. sidewalks. The deck of the Sherbrooke bridge is 24 in. thick, while that of the St. George bridge is 30 in. thick, or about 6 in. thicker than the slab design itself called for. This added thickness was provided to compensate for insufficient height of the new abutments and center pier, brought about by the fact that the old girder deck of the existing bridge did not permit their construction to a higher elevation without first being raised itself. With an excess of under-clearance at the crossing, it was considered more desirable to increase the depth of the new slab by six inches than to disturb the old bridge deck prematurely.

Each of the two slabs of each bridge is 6½ ft. wide and is independent of the other structurally; also each slab carries one track rail, dividing equally the train loads moved over them. Instead of ballast, each rail is laid on a creosoted oak cushion strip, set in a groove 5¾ in. wide by ½ in. deep, formed in the top of the slabs. The rails are held in place by special clips at intervals of 2 ft. along both sides, secured to the slabs by ¾-in. bolts which are turned down into internally-threaded pipe sleeves embedded in the concrete. Guards of 5-in. by 4-in. by ¾-in. steel angles, with the 5-in. leg up, are provided inside each rail, 10¾ in. in from the center-line of the rail, and are secured in place by bolts which screw into sleeves embedded in the concrete as in the case of the rail fastenings.

Details of Joint and Reinforcing

The joint between the slabs is of the lap type, with the top half of one slab projecting three inches over the bottom half of the other. Poured together on the same foundation, the slabs fit perfectly, with ⅜-in. clearance between the horizontal faces of the joint and a ½-in. opening between the vertical faces of the slabs in the top half of the joint. The ⅜-in. horizontal gap is filled with a 3-in. by ⅜-in. strip of sheet lead, forming a cushion bearing, and the ½-in. vertical opening is filled with asphalt mastic, with pre-molded asphalt fillers at each end.

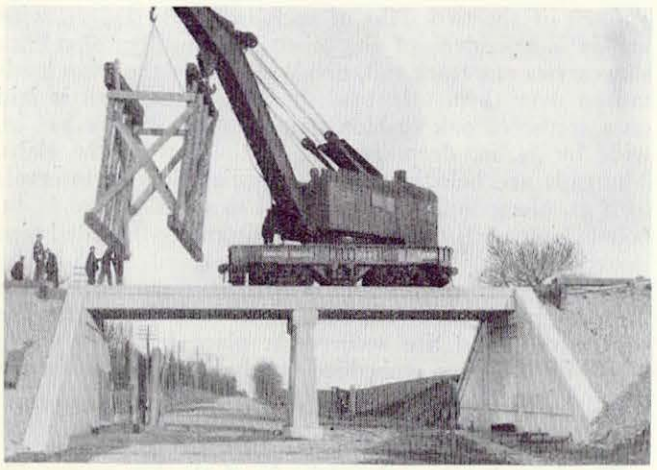


St. George Bridge—11:35 a.m.—Placing the Second Deck Slab

To insure a positive watertight joint, 10-in. by ⅛-in. strips of lead were anchored in the tops of the slabs, paralleling the joint seam, and then, when the slabs were erected and the joint filled with mastic, these lead sheets were lapped over each other and soldered. Other than this the slabs are not waterproofed, reliance being placed in the density of the concrete to prevent any perceptible absorption of moisture.

Both bridges are designed for Cooper's E-60 loading and both slabs are designed for the continuous beam action to which they are subjected. Both slabs are reinforced for both tension and compression, and a sufficient area of reinforcement for positive moment is bent up over the point of center support to take care of the negative moment. In addition, sufficient tension reinforcing was carried continuously through the base of the slab, from one end to the other, to take care of the stresses set up during erection, and a series of old 56-lb. steel rails, from 20 to 28 in. apart, were laid crosswise of the slab to distribute the loads laterally. All of the main reinforcing is of square deformed bars of high carbon steel with a minimum ultimate strength of 80,000 lb. per sq. in.

Of special interest with regard to the reinforcing is the fact that the specifications required that many of

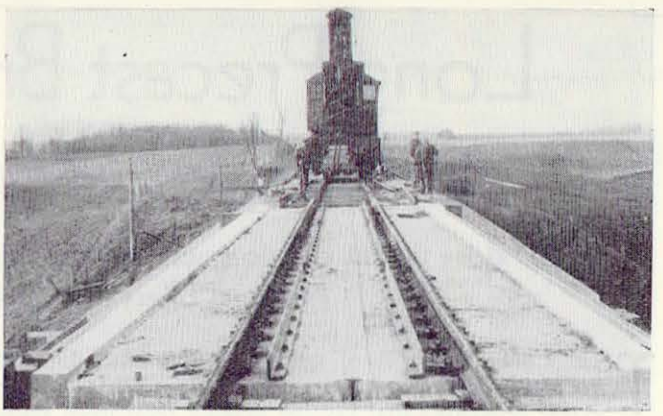


St. George Bridge—12:40 p.m.—Removing the Last of the Falsework

the bars be continuous for the full length of the slabs, without spliced or welded joints. Another feature of interest is the fact that the main reinforcing bars were assembled and welded into frames or trusses at the mill, using ½-in. plain square vertical ties. This was done to simplify assembly in the forms and, of still greater importance, to insure the greatest possible accuracy in this work, a feature that was particularly desirable because of the shallow depth of the slabs. It is said that the added cost of the pre-framing of the reinforcing cost less than ⅛ cent per lb. of steel, and that this added expense was offset completely by a saving of about two-thirds in the time which would have been required in assembling the individual bars in the field.

Slabs Manufactured Carefully

In the case of both bridges, the slabs were made in special forms at the track level, as near the point of erection as possible. The forms were constructed of 2-in. tongue and groove sheeting supported on a foundation of 12-in. by 12-in. timbers placed on 4-ft. centers to prevent sagging. Furthermore, to insure the integrity of each slab with regard to the other, particularly at the longitudinal joint, the timber foundation was made con-



St. George Bridge—12:25 p.m.—The Completed Bridge, Ready for Traffic, Showing Details of Track Fastenings

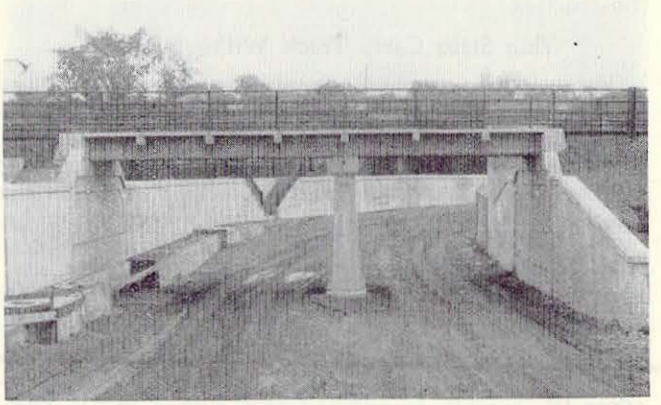
tinuous beneath both slabs, although only one slab was concreted at a time. All of the reinforcing was hung from an overhead frame, precluding blocking beneath it, and each slab was cast in one continuous operation.

The slab with the lower projection of the joint was poured first and was allowed to set for 10 days before its accompanying slab was poured. When ready to pour the second slab, the inside form of the first slab was removed, and then the exposed face, with suitable separators, was made to act as the inside form of the second slab. Before pouring the second slab, a greased board was laid up against the top half of the joint face of the first slab to provide for the joint opening between slabs; a thin zinc separator sheet was laid up against the lower half of the joint face; and a 3-in. by ⅛-in. strip of sheet lead was laid on the horizontal face of the joint.

Three thousand-pound concrete was called for in the slabs, this being carefully proportioned and provided with an admixture of Celite to increase its workability. Calcium chloride was also added in quantities varying with the temperature, to bring about quicker setting. Test cylinders broken at 28 days showed that the concrete in the Sherbrooke bridge slabs had developed a strength of 3,760 lb. per sq. in. in that period, while that in the St. George bridge had developed a strength of 4,440 lb. per sq. in.; about 25 and 47 per cent, respectively, more strength than the 3,000 lb. per sq. in. specified.

Slabs Set By Two 150-Ton Cranes

Preceding erection of the concrete slabs, falsework was driven at the bridge sites to carry traffic while the necessary excavation and masonry work were being completed. This falsework was extended on both sides



The Completed Precast Slab Bridge Over St. Francois Street at Sherbrooke, Que.

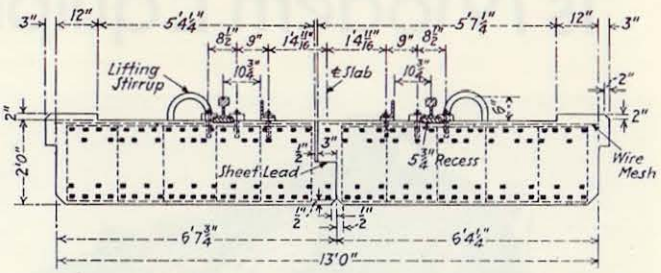
of the bridges to support the new deck slabs preparatory to their being set in final position. The slabs, those at Sherbrooke weighing 60 tons each and those at St. George weighing 79 tons each, were picked up by two 150-ton locomotive cranes and first moved out and set in position on the falsework, one slab on each side of the track.

No difficulty was experienced in handling the slabs, special stirrups having been provided near each end to afford lifting holds which would not introduce objectionable erection stresses within the slabs. However, the embankment approaches to the bridges were consolidated as much as possible by tamping to enable them to support the heavy concentrated loads on the front trucks of the cranes while handling the slabs. It is said that if it had not been for the danger of the embankment approaches giving way under the crane loads, the entire deck of each bridge might feasibly have been cast and erected as one slab instead of two, the cranes having ample capacity to handle the combined weights of even the two heaviest slabs.

Erection of the bridge decks was done between trains, just as was the temporary placement of the slabs on the erection falsework. At the appointed time, the bridge track and the temporary deck and bridge falsework were removed with the aid of the cranes, and then, one at a time, the slabs were raised from their falsework supports and swung over and set in final position on the new abutments and center pier. Sheet lead bearing pads, ¼ in. thick, were placed beneath the slabs on both the abutments and the pier, and the 3-in. by ⅜-in. strip of sheet lead called for in the joint design, and used temporarily during the pouring of the slabs, was laid on the horizontal face between slabs.

As soon as the slabs were set in place, the joint was poured with asphalt mastic and the lead sealing sheets on top were lapped and soldered, as provided for. While this work was progressing, the crane crews removed the falsework bents which had supported the slabs temporarily, and other men in the gang set in the track rails on the oak cushion strips which had previously been put in place.

With the tightening of the rail clip bolts and the removal of the last falsework from the roadway beneath, the bridge was put in unrestricted service. In the case of the St. George bridge, the work was completed just 2 hr. 10 min. after the track was taken over for the bridge erection. This relatively short interval for complete erection is particularly significant in view of the



Transverse Cross Section Through the Center of the Sherbrooke Bridge Slabs

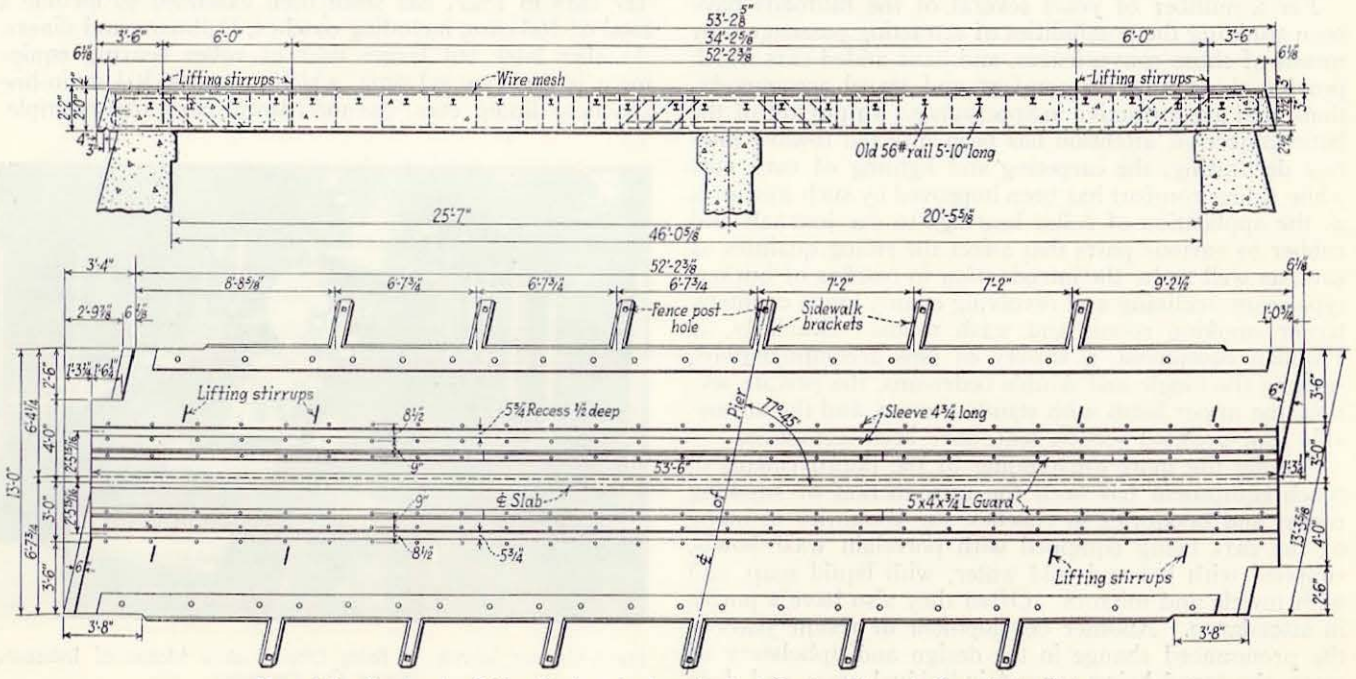
fact that the work was not hurried at any stage, traffic not requiring the return of the track to service for some time after it was actually restored. Details of the schedule assumed in the work are given in the following:

Preparatory work on slabs completed and track taken out of service at	10:30 a. m.
Track and bridge falsework completely removed by	11:00 a. m.
First slab set in place by	11:20 a. m.
Second slab set in place by	11:35 a. m.
Deck ready to receive rails by	12:05 p. m.
Rail in and most of falsework removed by	12:25 p. m.
Last falsework removed and track restored to service at	12:40 p. m.

The work of erecting the bridge at Sherbrooke was not timed in detail, but it is said that the actual time required to place both slabs was only 20 min.

Of equal interest with the structural and erection features of the two precast slab bridges is their cost. The slabs of the St. George bridge cost $1,140 each, while those for the Sherbrooke bridge, including the walkway brackets, but not the walkway slabs, cost $1,305.

The bridges were designed in the bridge department of the Central region of the Canadian National at Toronto, under the direction of C. P. Disney, bridge engineer; T. T. Irving, chief engineer; and W. A. Kingsland, general manager. The deck slabs were manufactured by the Goldie Construction Company, Ltd., Toronto, while their erection was handled by the bridge forces of the road under the direction of R. A. Baldwin, engineer of construction.



Plan of the Sherbrooke Bridge Deck and a Longitudinal Section Through One of the Slabs

Is Modern Equipment the Answer?

The Olympian of the Milwaukee Was One of the First Trains to Be Equipped Throughout with Roller Bearings

Do revolving seats, improved lavatory facilities, the latest appointments, roller bearings, etc., attract traffic?

TO what extent do the newer facilities that are being provided in some of the more modern equipment, including reclining-revolving seats, washrooms and smoking rooms in coaches, adjustable seats in Pullman cars, and other improvements in coaches and sleeping cars attract travelers to the rails? This is a question that is very much before the railways today in their consideration of ways to arrest the inroads of other transportation agencies. For such answer as is available one must turn to those few railroads that are now operating equipment with these facilities.

For a number of years several of the railroads have been studying the possibilities of attracting passengers by means of these conveniences, and have added cars which provide the utmost in comfort and travel accommodations, and are attractive in appearance. In pursuit of the latter objective, attention has been directed toward interior decorating, the carpeting and lighting of cars, etc., while riding comfort has been improved by such measures as the application of roller bearings to car journals and rubber to various parts that affect the riding qualities of cars, as well as by the introduction in coaches of bucket-type seats, reclining and revolving chairs, lunch counters, larger smoking rooms and wash rooms. Similarly, in Pullman equipment, a variety of new accommodations, such as the single and double bedrooms, the private section, the upper berth with standing room, and the adjustable four-position section seat, have been introduced.

Among the more outstanding of the improvements in coach equipment has been the introduction of smoking rooms and lavatories in coaches, the lavatories in many of the cars being equipped with porcelain wash-bowls, supplied with hot and cold water, with liquid soap, and with towels and mirrors. Often they also have a porter in attendance. Another development of recent years is the pronounced change in the design and upholstery of seats, the trend being toward individual seats and deep cushions. The seats include the bucket-type and those with individual back and arms, many of them designed to revolve and in some cases to permit adjustment of the backs.

Still another contribution to riding comfort has been the application of roller bearings to passenger cars. The Chicago, Milwaukee, St. Paul & Pacific made the first large application, involving complete equipment for the Pioneer Limited operating between Chicago and the Twin Cities, and for the Olympian operating between Chicago and Seattle, Wash. The original application to 127 cars in 1927, has since been extended to include a total of 163 cars, including coaches, Pullmans and diners. Another later but larger user of roller bearing equipment is the Pennsylvania, which now has 304 main-line coaches, dining cars, gas-mechanical cars and multiple-

Lunch-Counter Service Is Being Offered as a Means of Increasing Dining Car Patronage

unit electric cars so equipped. With roller bearings passenger trains can be started with about one-eighth the effort of corresponding plain-bearing trains, thereby reducing the shock to the equipment, but more particularly to the passengers.

Rubber Being Used to Increase Riding Comfort

The most recent development to increase the riding comfort of cars is the application of rubber to car parts. This material is now being used for various points in the truck, buffing devices and car structure and also experimentally in the wheel center plates to give resiliency and dampen noise and vibration. The Baltimore & Ohio, besides using rubber pads at points where metal contacts metal, has set car windows in rubber to exclude dust and is using sponge rubber for seat arm rests. A rubber company is also experimenting with a hair-rubber to replace springs in seat cushions.

Still another way in which a number of the railways have endeavored to make their services more attractive is through the establishing of lower priced meals. To bring this about, they have reduced dining car prices generally, and in addition are serving sandwiches and light meals in the coaches. On the Chicago & North Western, for example, Select-Your-Price meals, ranging from 75 cents to $1.25, were established on April 15, 1933, on all dining cars to supplement club breakfasts which range from 50 cents to 90 cents, club luncheons at $1 and a la carte service. As a result, 1,209 passengers from coaches were persuaded to patronize dining cars from May 4 to May 20, the majority of these using the service for the first time. In addition, considerable new business was secured from passengers in sleeping and parlor cars. Among other roads which have changed their dining car service are the Great Northern, which has eliminated its $1 luncheons and $1.50 dinners and substituted meals ranging from 50 cents to $1.25; the Missouri-Kansas-Texas, which has made available breakfasts ranging from 30 cents to 75 cents, in addition to a la carte service; and the Southern Pacific, which is now serving luncheons and dinners for 80 cents to $1.25 and breakfasts for 50 cents to 90 cents, known as "Meals Select" because the price includes five entrees.

This development of dining car service has been accompanied by the introduction of the lunch counter and buffet, wherein patrons may secure light lunches, coffee, sandwiches and soft drinks at moderate prices. Typical of the former are the lunch counter cars of the Pennsylvania and the Ft. Worth & Denver City, and the lunch counter compartments in cars on the Baltimore & Ohio and the Southern Pacific. That of the Ft. Worth & Denver City provides a standard lunch-counter service with sandwiches, pastry and coffee, a plate breakfast costing as little as 40 cents and a plate lunch and dinner at 50 cents, and a table service with a 75-cent breakfast, and a 90-cent lunch and dinner in addition to a la carte orders.

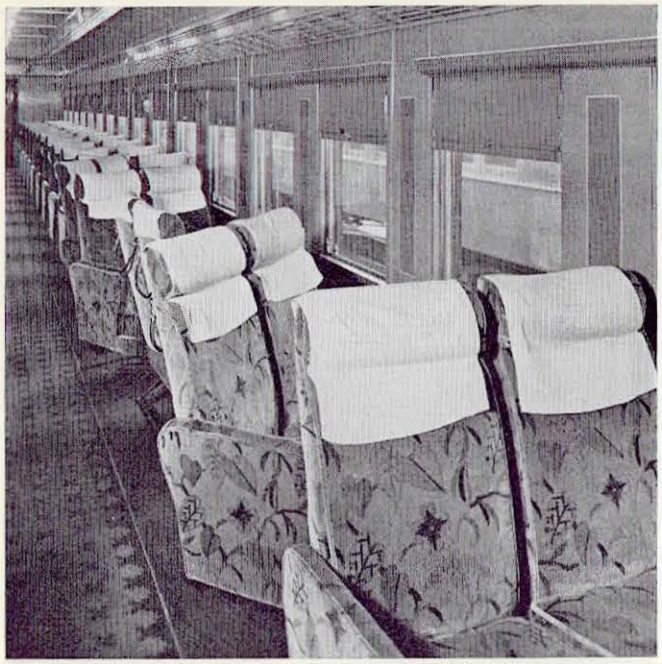
Salon Cars Have Replaced Day Coaches on Through Trains of the Chesapeake & Ohio and the Pere Marquette

The Pullman Car & Manufacturing Corporation's Latest Passenger Car Contains Many Innovations

C. & O. Establishes George Washington

To illustrate the manner in which individual roads have adopted these various measures, somewhat specific reference will be made here to two or three outstanding trains. Among the railroads which have realized that improved equipment is necessary to attract and hold traffic, is the Chesapeake & Ohio, which, on April 24, 1932, placed in service a new train, "The George Washington," for which the equipment consisted of 22 Pullman sleeping and lounge cars, 3 dining cars and 3 imperial salon cars. To give the train individuality, every car bears a name related to some person or place associated with George Washington's part in the making of the United States. The interior of each car is decorated with a reproduction of some famous painting or the likeness of an historical personage or event suggested by the name of the car itself. For example, the rooms in the sleeping car named Valley Forge, instead of being lettered or numbered, are named Anthony Wayne, Nathaniel Greene and Light Horse Harry Lee, three commanders who served under Washington in revolutionary days, and the decorations of these rooms suggest events in the careers of these men. Likewise, each berth or section in the Pullman cars is so decorated that the surroundings suggest something of the person, place or event for which the car has been named.

The library-observation-lounge cars have been named the Commander-in-Chief and the American Revolution.



The Reclining-Seat Coaches on the Aristocrat of the Burlington are Typical of the New Facilities in Coaches

In these cars the principal decorative features are the painting of Washington Crossing the Delaware and the historically famous scene of the Signing of the Declaration of Independence. The furnishings and decorations are radically different from those ordinarily found in Pullman cars, suggesting the atmosphere of the period, with such modern luxuries as buffet valet service, magazines, daily papers, telephone and radio.

Likewise in the dining cars, which have been named after three celebrated colonial taverns—Gadsby's Tavern, Raleigh Tavern and Michie's Tavern—every effort has been made to inject into the decorations as much of the colonial tavern atmosphere as was practicable in the construction of railway equipment. The carpets suggest old colonial rugs on the tavern floor, and the chairs are a copy of famous designs by Duncan Phyfe, who made some of the furniture for Mt. Vernon. The walls of each car are illuminated by a series of old colonial color prints.

The Imperial salon cars or coaches have been designed to provide the maximum of comfort and convenience for those travelers who do not desire Pullman accommodations. These cars, while of the same size as the conventional car, have been arranged to seat a maximum of 45 persons. Upholstered individual seats are provided which may be turned around at will. A deep pile carpet on the floor, individual reading lamps for each chair, elaborately furnished restrooms and smoking rooms are features of these cars.

C. & O. Sportsman

Still another train on the Chesapeake & Ohio, "The Sportsman," which was established as a new through train on March 30, 1930, between Norfolk, Va., on the east, and Columbus, Ohio, Toledo, Cleveland and Detroit, Mich., on the west, contains many innovations in equipment. Here the usual type of day coach has been replaced with a salon car, which is fitted with seats with individual backs and arms and double spring cushions, which have unusual width. These seats are arranged in pairs on one side of the car and singly on the other side, and may be reversed by turning about on a vertical axis. These cars seat 48 persons.

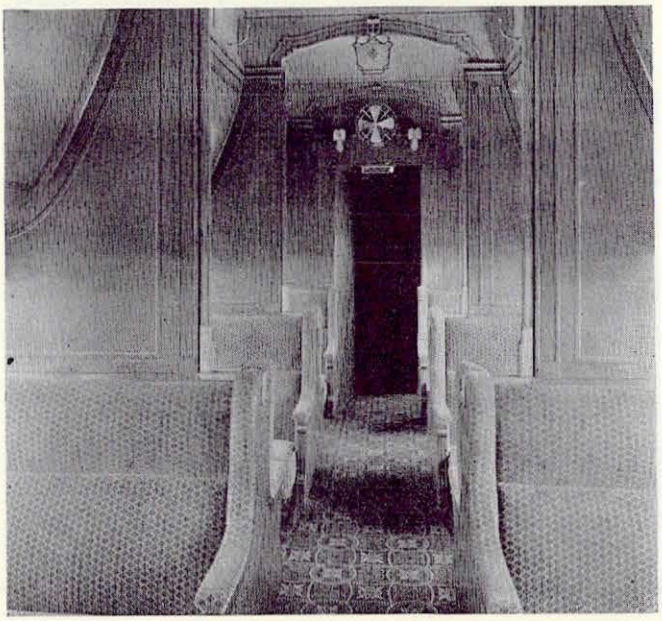
Similarly, the combination smoking-car on this train is fitted with double revolving seats of the individual type, upholstered in genuine Spanish leather and with a center arm in the middle of each double seat, which may be dropped. The floors of both the smoking and salon cars are covered with rubber block tiling with velvet aisle strips. The lavatories in both cars have hot and cold water and both cars are fitted with ceiling fans. The sides and ceilings of these cars are finished in gray tones. The upholstery in the salon cars is in figured blue while the figured aisle strips are in blue of a slightly lighter tone.

B. & O. Promotes Comfort for Coach Passengers—Reclining Chairs on Night Trains

Another road which has gone far to promote the maximum of comfort for coach travelers, and thereby bid for their patronage, is the Baltimore & Ohio which now has individual-seat coaches in service on practically all of its main-line trains. The deep cushioned seats in these cars are of the individual type, with demountable arm rests between each pair, and are upholstered in rich handsome color schemes.

The coaches are also equipped with double windows set in rubber to exclude dust and are especially arranged for easy lifting. In each window is an individual ventilator that can be opened or closed readily to suit one's preference. Filtered drinking water and free paper cups are provided. In each car end is a lavatory and toilet of sanitary and roomy design, the lavatory being equipped with a white porcelain washbowl, liquid soap, free paper towels and a large mirror.

Another type of car developed by the Baltimore & Ohio to encourage rail travel is the reclining individual seat coach, which is in operation between New York, Baltimore and Washington, between Pittsburgh, Columbus and Cincinnati, between Chicago and New York, between Washington and Detroit, and between Detroit, Toledo, Cincinnati and Louisville. These cars have been designed especially to afford the greatest possible comfort for overnight travelers who do not wish to incur the expense of sleeping car accommodations. The interior of the coach is handsomely fitted in living room fashion, soft brown tones predominating, with individual seats for 40 people. The seats are richly up-



The Modern Pullman Car Contains Many Improvements Designed to Increase Travel Comfort

holstered and double cushioned, and are covered with linen slip covers. The seat arm rests are of sponge rubber composition to promote the utmost ease, the middle arm rest being collapsible so that it can be removed to allow infants and small children to lie down. A unique feature is a lunch counter compartment in one end, in charge of an attendant. Here light lunches, coffee, sandwiches and soft drinks are served at moderate prices, no item costing more than 10 cents.

Another arrangement of unusual convenience is the provision of separate smoking rooms for men and women. The women's smoking room contains leather-covered movable arm chairs, differing in this respect from the men's smoking room, which is equipped with leather-cushioned longitudinal seats. Both rooms are of generous size and have large mirrors, as well as adequate and modern lavatory facilities.

The ceiling dome lights can be dimmed at will by train employees and there are attractive shaded wall lights for individual night reading. In addition to ceiling ventilators, there is an individual ventilator at each window to permit the passenger to regulate the amount of fresh air desired without admitting dust or cinders.

S. P. Has Given Much Study to Improvements

The Southern Pacific is another road that has given much study and thought to improvements of this nature and their relation to patronage. In 1930, the railroad purchased a number of reclining chair cars which are equipped with large dressing and lounging rooms similar to those in the latest types of Pullman sleeping cars. The rooms are each large enough to accommodate six to eight passengers, while the woman's room contains a mirror, a table and a chair. Both rest rooms have porcelain washbasins and roomy toilets. As a rule, light colors have been adopted for interior decoration and care has been used to select attractive trimmings, particularly in the case of electric fans and lighting fixtures. The chairs are of the adjustable type which materially add to the comfort of the traveler.

In 1929, the Southern Pacific first applied aluminum paint and anti-actinic window glass to lounge cars as a means of protecting passengers from the sun's rays in the summer on cross-country trips. The aluminum paint was employed because of its heat-reflecting quality, while the special window glass, by admitting light but excluding heat, cuts off 80 per cent of the heat from the sun's rays while transmitting about 65 per cent of the light.

New York Central Day Coach De Luxe

To provide fast and attractive service, especially for coach passengers, the New York Central, in 1928, introduced the Day Coach DeLuxe between New York and Buffalo, with coaches, a dining car and an observation car, all open to coach passengers. The coaches have individual seats and large windows, while the interiors of the cars are decorated in walnut brown with tinted ceilings. Lavatories have hot and cold water, and a train attendant is at the service of the passengers. The observation car was an innovation for coach passengers. It has a spacious platform and the interior is an observation parlor car with large windows, movable upholstered chairs, carpeted floors and harmonizing tones.

Modern Cars Attract Passengers

Of what effect are these various improvements? Those roads which have installed the newer equipment are in the best position to answer. These roads report an increase in the patronage of these cars. Illustrative of this is the experience of the Pere Marquette, which operates Imperial salon cars, or revolving seat coaches, in conjunction with older equipment in all of its day trains. On these trains, the salon cars are always filled, patrons moving into them from other coaches as soon as vacancies occur. In expressing their appreciation of the cars to conductors, not a few passengers remark that they are using the railway because of the cars. The new cars have greatly increased the good-will of the public toward the railway.

Popular Exhibits at Century of Progress

That the public is interested in modern equipment is also shown by the large number of people who visit new cars open for public inspection. At the Century of Progress exposition in Chicago, where the best trains of the Baltimore & Ohio; the Chicago, Burlington & Quincy; and the London, Midland & Scottish railways, the Mexican presidential train, and the newer Pullman sleeping car, and a Pullman Car & Manufacturing Company's coach are on display, a steady stream of people is passing through the cars, totaling 751,172 persons from May 27 to July 18. For the 53 days, the attendance has averaged 14,173 per day or 15 per cent of the total number of persons attending the Fair, while during the last three weeks the average has been running at the rate of 16,000 per day.

Public interest in modern equipment is further demonstrated by the number of persons visiting trains opened for public inspection in the trainsheds of various railroads. Just before the Chicago & North Western placed new cars in service on the Corn King Limited and the North Western Limited in August, 1929, 40,000 persons visited the trains at its Chicago terminal, while when the Columbine and the Portland Rose were on display in May and September, 1930, respectively, 17,000 persons passed through the former and 15,000 through the latter.

Likewise when the Royal Scot toured the East on its run from Montreal, Que., to Chicago, widespread interest in the equipment was displayed, more than 200,000 persons visiting the train in its brief stops at various points.

Pullman's Displays Draw Millions

Another demonstration of the public's interest in modern equipment is reflected in the Pullman Company exhibits of Pullman car accommodations, which have been viewed by more than 6,300,000 persons since March 28, 1931.

It would appear to be evident, therefore, that the public is still interested in railway passenger service and in the improvements in equipment and that the railways have, in this newer equipment, one means of holding the traffic which they now have and of bringing back to the rails much of that traffic that has been attracted to the buses with their newer seats, etc.

In the Issue of August 19

The next article of the series will appear in the *Railway Age* of August 19. It will trace the trend toward faster passenger train schedules during recent years and will evaluate its effectiveness in promoting travel and in meeting competition. It will discuss the potential passenger train speeds made possible by modern locomotives, cars and car equipment and outline the possibilities of the light, high-speed rail motor car and its adaptability to fast, frequent schedules.

Railroads' Public Relations Policies

Government ownership imminent unless vigorous publicity campaign is inaugurated

By F. J. Lisman
Chairman, Lisman Corporation, New York

THE masses of the American people, whether shippers or merely citizens, do not want government ownership of railroads, but unless this opinion can be sufficiently aroused and coordinated to make itself articulate, we shall have government ownership very soon. Congress, which meets in January, 1934, will consider legislation for the railroads which will permanently affect their status and such legislation will be passed unless other important matters interfere or unless no agreement on this subject can be arrived at. Public opinion as to what should be done is at present entirely inarticulate and the opinion of the Co-ordinator, which undoubtedly will be backed by the President and his new super-cabinet, will carry preponderant weight.

In the past, the Co-ordinator has been very frank in his advocacy of government ownership. Starting with this pre-disposition, it is very doubtful whether he will change his mind after he has had experience with the wastes of competition as developed by our present system; although this is undoubtedly quite intelligent in spots, as against government management with its almost unbelievable stupidity, inefficiency, log-rolling, inertia and bumptiousness which, in the long run, stifle such intelligence as may be available within the organization. Bumptiousness is caused by endowing small men with power, and is in inverse ratio to the size of the man.

Government Ownership Wasteful

Those familiar with the workings of government know that the average government employee becomes gradually less efficient for the following reasons: If he makes a good suggestion, or does a good piece of work, his superior takes the credit; but if he makes a poor suggestion, he gets blamed for it. Generally he sees the promotion of those who have the greatest political influence but who may be the least efficient. In consequence, those who have any gumption seek private employment while the lazy ones just do enough work to keep within the law and hold their jobs. In other words, we know that in private life the fit survive while the unfit fall by the wayside. In government service, the unfit stay while the fit or ambitious either leave, or endeavor or hope to leave.

The Average Man's Ideas Are Hazy

In order to arouse the American public, it is necessary to analyze its present point of view. The masses, whose reading on this subject is mostly limited to headlines, have very hazy ideas. They feel in a vague way that the railroads are up against it; that the highway competition is not quite fair, and that the railroad tax burden as well as their own is unduly heavy. On the other hand, they have a notion that the railroads have not been progressive in anticipating or meeting highway competition; that their fares are too high; that they are unwilling to adjust to changed conditions, and probably are not quite fair in their statements about trucks and buses. They have heard about fancy railroad salaries and favoritism of all kinds. They do not in the least understand what an infinitesimal amount railroad executives' salaries are in proportion to the gross earnings; nor do they realize the burden of responsibility resting upon the executives. Neither do they understand that in normal times men of requisite capacity to become executives have opportunities to make a large income in private life with very much less responsibility and that it is, therefore, necessary for the carriers to pay a few big salaries, not only to hold the men they now have, but as an incentive to those in minor positions who gradually expect to get to the top. About waterways, such as the U. S. Barge Line and the Panama Canal, they do not think at all, except that most people in a hazy way want to see the government spend money freely.

Sob-Sister Stuff Will Not Work

In the writer's opinion the trouble with the present attempt to reach the masses is that the material put out is largely of the whining kind—almost sob-sister stuff. This has no human appeal; neither have statistics. To tell people that the trains of the XYZ Road have been on time for three months to the extent of 99.5 per cent is just meaningless. But, if you tell the people that if they had traveled every day in the year, their train might have been late not more than three times, it would mean something. It would be still much more interesting if one could tell the public in simple words what complicated arrangements are required to work out a timetable and what a wonderful result of organization it is that trains are on time at all.

It is not easy to get this sort of thing printed, especially since the railroads do very little advertising; however, if the head of the local union in Oshkosh, or the conductor who happens to be the mayor of some little town, asks his local newspaper man to print these things, he will be much more successful than the companies are. A local newspaper man will hearken to a man with whom he is acquainted or who has a local standing, while he rather resents the fact that he is asked by some big corporation to print something which has been prepared by it, even though he may have no objection to the material.

The automobile people can get plenty of newspaper space because they are large advertisers. This does not mean that the average newspaper space is for sale but merely that the newspaper men are human like the rest of us and believe in reciprocity—the very argument railroad officers are using with supply men and others.

Railroads No Longer Impress Public

Before the automobile and airplane age, in pioneering days, the railroad was the big thing. It appealed to everyone; it meant romance and it was not difficult to get the public's attention. Now the status is changed.

The imagination of impressive boys is no longer set on fire by a railroad train and, very rarely, even by the biggest locomotive. Therefore, entirely new tactics are necessary. In order to get the attention of the masses, the cleverest kind of press agent material is required.

The eastern railroads are now doing joint advertising in connection with excursions to the World's Fair at Chicago. The public at large, especially in the metropolitan district, does not know anything about these joint ads yet, because, generally speaking the metropolitan newspapers are so big that people only look for ads of particular interest to them, while many merely glance at the headlines. This joint advertising, being almost unprecedented, is decidedly news and might have been and certainly should have been exploited as news by at least those newspapers where advertisements appeared.

How to Deal with Highway Competition

Traveling along the highways, one sees plenty of overturned trucks. There are numerous automobile accidents caused by heavy trucks and buses. The railroads, through their organizations at every station, should see that these accidents have publicity, thus making the public feel that railroad travel is much safer. The railroads are so very safe now that a railroad accident is real news while automobile accidents are so very frequent that they have ceased to be news, certainly for the metropolitan or even medium sized town press but, nevertheless, inasmuch as nearly everyone owns an automobile and frequently uses it, everyone is interested in these accidents and they should be told about them. It is fair to say that if the Southern Pacific had a collision in which two people were killed, this would be telegraphed all over the country and generally published, while the daily automobile accidents involving an average of 90 people a day get practically no attention except in the locality in which they happen to occur.

The National Automobile Chamber of Commerce represents the manufacturers of trucks and buses, as well as private passenger cars, and in that capacity has represented these adverse interests as against the railroads. The bulk of the owners of passenger cars resent the huge trucks and buses on highways, if anything, considerably more than the railroads do and much could be done by a little intensive work on behalf of the carriers through their friends to properly regulate the buses and trucks as to weight, size, speed and general abuse of highways and, particularly, in helping to enforce such laws as are now on the statute books on this subject but are being almost entirely disregarded.

Gasoline Tax in U. S. Is Very Low

The automobile and oil people are complaining bitterly about American taxes on their product. For some unexplainable reasons the railroads have not brought out the fact that the gasoline taxes in the United States are probably lower than they are anywhere else in the world.

A comparative statement of the cost of gasoline to the ordinary consumer in the more important countries of the world, no doubt would receive much publicity; inasmuch as this item would interest many readers, it would constitute real news.

Directors with Anti-Railroad Interests

Some railroad directors who are interested in oil companies and truck transportation, probably would not approve of such publicity. This brings up the question as to whether, in view of the general inertia of railroad stock owners, the railroad management itself should not give serious consideration to the fact that it might be well to replace many of the railroad directors who have conflicting interests with other men who will really co-operate. Prominent local citizens or large shippers on boards of directors, with but a comparatively small stock interest, are more often a liability than an asset because they want to use their position to benefit their community or company and not to help the railroad.

Whenever an l.c.l. car to any particular town is taken off, or even if it is considered that it no longer pays, there should be a news item about it in order to make the local merchants realize that they should patronize the railroad because, after all, in bad weather they are reasonably certain not to get their truck delivery and, at best, truck delivery is not as regular as that offered by the railroads.

The possibility of co-operation by railroad employees has by no means been sufficiently utilized to help the carriers, although the employees themselves have on their own initiative done much valuable work along this line.

Putting Over a Real Campaign

To do all this means a live and ingenious organization, ever on its toes, ever thinking about getting to the public in an interesting way and from a new angle. Any reasonable amount of money spent for this purpose is fully justified. The people who really have the most to lose by government ownership, are the large shippers and security owners. But the heads of large or even medium concerns leave their relations with the carriers mostly to their traffic men. They do not realize for one minute that the traffic men who are continuously chiseling the revenues of the carriers in order to justify their own existence are undermining the net earning capacity of the carriers and are accelerating government ownership. There is an adage which says "The wheel which squeals the loudest is the wheel which gets the grease." This particularly applies in the legislative halls as best evidenced by veterans' pensions.

Reaching the Shippers

The railroads must plan thoroughly to reach every shipper, in order to put their case before him. This cannot be done by circular; it must be done in a personal way which means that each community must be studied from that angle, the same as a man who wants to be elected to office must study his local community. To put a definite case, let us think of a town with say 20,000 inhabitants which may have anywhere from one to four railroads.

Those in charge of publicity should send for the local agents of these railroads, find out who are the railroads' friends in the town and then make a list of the influential people in the community to study who can best approach each particular man, whether he be the local newspaper man, banker, merchant, manufacturer or political or civic leader who may be a lawyer or doctor—and then go to it! This cannot be done by any one railroad and it means organization and team work. It means "selling" the railroads to the public.

Qualities Station Agents Should Have

The local station agent who may have been promoted because he was a good telegraph operator and possibly fairly good at keeping accounts at a smaller station, is not necessarily a salesman; in fact, frequently he is not a salesman at all and therefore drives business away from the railroad. He certainly would not be the man to "sell" the railroad locally. This suggested campaign may develop the fact that a good many men of that type

have been misplaced, which in itself would be helpful to the employing companies. All this means the necessity for an enthusiastic organization, with good executives. This, again, cannot be secured without an adequate appropriation.

Security Holders Should Be Enlisted

The security holders should also be appealed to—possibly to better advantage directly by the corporations in which they are interested, but the letter sent to them must have human interest, plus punch, instead of statistics with a tear sauce! Personal interviews with large security owners would be better. The number of outstanding life insurance policies is almost equal to one-half the population. The number of savings bank accounts is in excess of one-quarter the population. From the angle of insurance or saving bank deposits, nearly everyone is interested in railroad securities. Neither the insurance companies nor savings banks want to advertise the fact that they have railroad securities which have declined and in some cases may be severely injured by government ownership; nevertheless, collectively, this danger can be brought home to the masses.

There are also universities, colleges, hospitals and all kind of private endowments and well-to-do individuals interested in this subject.

A "Loud Squeal"

The publicity work carried on at present does not go far enough or deep enough to affect public sentiment which will express itself in action. It merely seems like a rear guard battle which is not intended to affect the result, but merely to cover a retreat. The requisite appropriation by the carriers to carry out the above plan would run into six figures, if not somewhat beyond that. Governmental authorities might theoretically object to such an expenditure but, inasmuch as the carriers are not getting a fair return on their capital invested anyway, it should be within their discretion how they should spend the meager net earnings which they receive. It would certainly appear that they should have the right to spend this money in the defense of their stockholders just the same as they would have the right to employ lawyers to defend them against other aggressors.

Present Expenditures Inadequate Even for Defense

There are some who might question the propriety of the so-called propaganda expenses of the carriers. In the writer's opinion these expenses have been absolutely inadequate for the defense of the railroads and if such a question ever were raised it would in fairness have to be raised also as to propaganda activities carried on in the name of the Automobile Chamber of Commerce by its motor truck division, as well as that of various other truck propaganda organizations, and should include the propaganda expenses of the Inland Waterways Corporation. The head of that corporation has stated in his annual report that he considers he has a mandate from Congress to carry on such work.

If the railroads cannot carry on a consistent campaign to convince large shippers, investors and the intelligent citizenry of the impending danger for the purpose of making the required "loud squeal" we shall have government ownership within a very few years. This might partially eliminate the waste due to competitive passenger and freight soliciting offices, round-about hauls, etc., but on the other hand, there will be no more scrapping of superfluous branch lines—neither would there be much consolidation of shops, yards, etc., because the representatives of the various congressional districts will combine or log-roll against economies affecting their home communities and practically every district would be thus affected. The difficulty which every administration has encountered in eliminating unnecessary navy yards, army posts, soldiers' homes, etc., proves this.

We would see a repetition of what happened when the companies had to obtain the authority of state commissions before issuing new securities. There was the case of the Southern Pacific, operating in the States of California, Arizona and New Mexico, which wanted to get authority to issue a block of bonds, the proceeds to be expended in California for extension and improvements, which could not be obtained until they agreed to spend their pro rata in all three states. Those familiar with the past history of the International Railway, extending from Quebec easterly to the Maritime Provinces, can tell a weird story about the immense number of unnecessary employees and passenger service intended to accommodate everyone who was in a position where he could influence votes.

Private Management Not So Bad

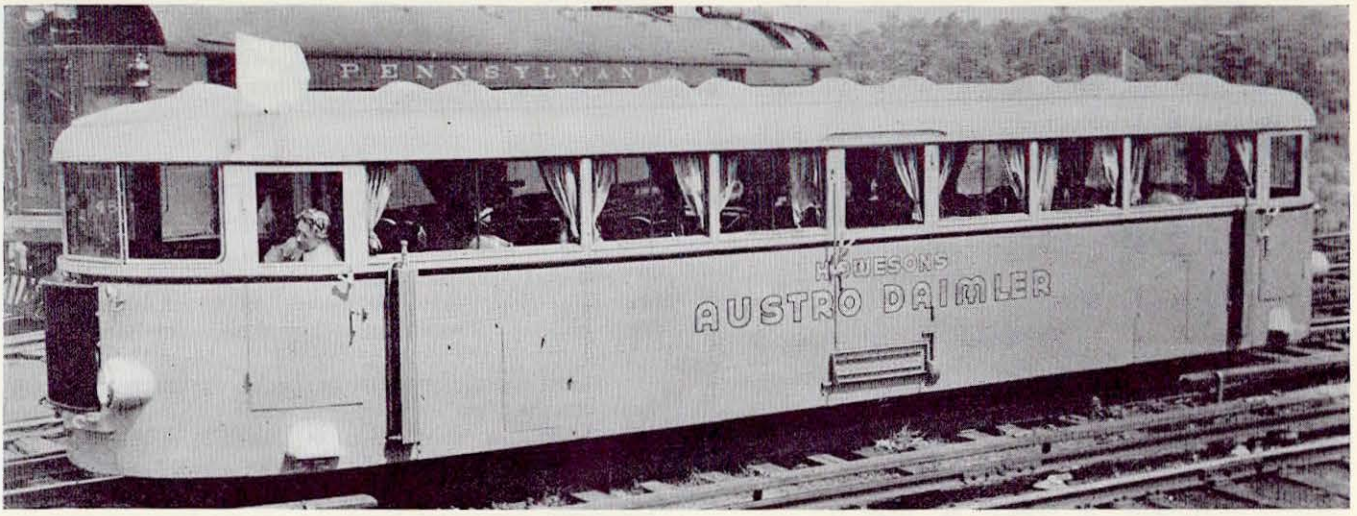
Private management of railroads is not 100 per cent perfect, any more than any other human enterprise. Much has been said about the wastes connected with it—largely because there has been concentration of attention on such wastes, and the endeavor on part of everyone to pick flaws and find them. Nevertheless, the railroads are probably among the most efficient enterprises in the country; they are certainly operated at over 85 per cent efficiency which is surely better than the average large or small manufacturing concern. Included in this 15 per cent of waste of efficiency are the wastes due to competition which the public has heretofore insisted upon. It is doubtful whether government organizations are operated even 50 per cent as efficiently. Those who have made a study of government and realize the highly developed grafting organizations of our big cities and the lackadaisical and stupid lack of supervision of the minor communities such as counties, villages, etc., will surely subscribe to this.

Government ownership of railroads would presumably mean that their underlying bonds would be exchanged at par for government bonds bearing a low rate of interest; junior bond issues might get very much less, while the value of most stocks would be extremely doubtful. Such values probably would not be established for many years—that is, until the Supreme Court has rendered a series of decisions based on whatever law may be passed. In the meanwhile there would be the risk that the legal profession would collect more than the bona fide investors.

No Interference With Individual Roads

In order to convey the required information to the public, a national organization is necessary, with some one at the head who realizes the size and importance of his problem. Such an organization not only need not, but should not, in any way interfere with the local public relations work now being carried on by the various companies although, undoubtedly, much could be done to raise the general effectiveness of these individual organizations by co-operation.

It is a pity that so few people can realize that we are now living in the midst of a revolution and that we are revolving very rapidly, with the power house directed by idealists, theorists and practical politicians, with an increasing tendency toward experimentation. If these experiments should succeed, we shall have created an intricate anthill or beehive with the workers and voters all subject to the same queenbee.



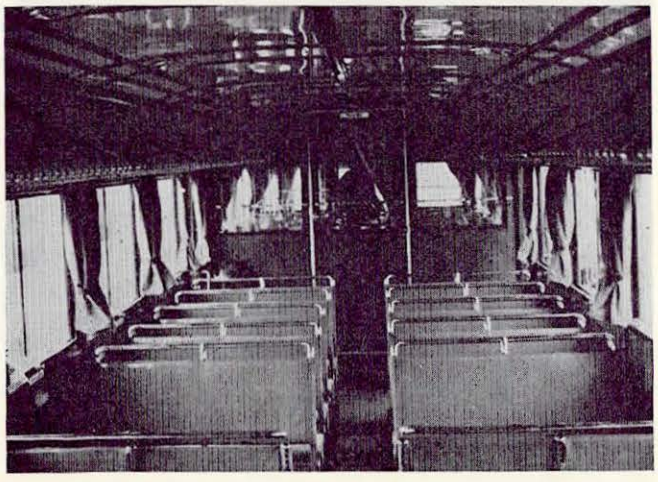
Forty-Passenger Howesons Austro-Daimler Rail Car

Austro-Daimler Pneumatic Tired Rail Car

Air-suspension construction permits use of rubber tires without contact with rails—Hydraulic transmission provides smooth operation

DURING the past two months a light-weight, rubber-tired, gasoline-driven rail car designed and build by the Austro-Daimler A. G., Vienna, Austria, has been demonstrated on American railroads. The design employs a hydraulic transmission in combination with an unusual design of traction wheel. The feature of these wheels is the fact that they take advantage of the cushioning effect of pneumatic tires and at the same time utilize a steel-tired rim for guiding the vehicle on the rails.

Rail cars of this design are being introduced in this country by E. K. Howe & Sons, Inc., 500 Fifth Avenue, New York, and are known under the trade name of "Howesons" Austro-Daimler rail car. The manufacturer has built quite a number of cars for service in Europe, varying in size from 24 to 70 passengers capacity and in engine horsepower from 80 to 160. The particular car which is being shown in this country is one of 40-passenger capacity having an over-all length of 38 ft. 6 in. and powered with two Austrian Daimler gasoline motors of 80 hp. each, providing sufficient power to operate at maximum speeds of 80 m.p.h.

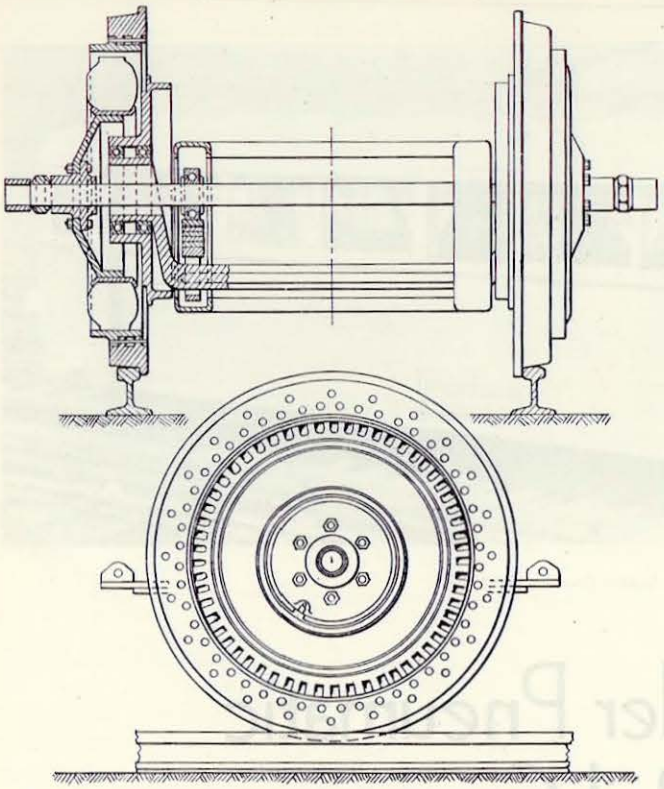


The Interior of the Car Presents a Pleasing Appearance

Chassis and Air Suspension

In the development of this design of rail car the manufacturers have worked out an extremely light weight chassis of truss form built up of pressed sections welded throughout. The pneumatic tires support the load of the vehicle and transmit the propelling force to steel tires which guide the car along the track. These track wheels are not connected to the chassis or frame and as a result all vertical and lateral shocks are transmitted to and absorbed by the pneumatic tires which have separate axles suspended on semi-elliptic springs attached to the chassis frame.

The axle arrangement is particularly interesting and is clearly shown in the drawing accompanying this article. It is what may be called a double-axle arrangement in which one axle supports the steel-tired rail wheel of the car on ball or roller bearings. The carrying axle, in which the driving shaft is housed, is suspended on springs attached to the chassis by means of a special spring arrangement which permits the necessary movement for the carrying axle. Both ends of these springs are supported by self-lubricating rubber-composition spring seats which are secured to the chassis frame. Each spring seat has a sliding surface under which the



The Arrangement of the Axles—the Carrying Axle Supports the Pneumatic-Tired Wheel and the Guiding Axle the Steel-Tired Wheel

top leaf of the spring moves. The movement of the carrying-axle housing is controlled by radius links which moves about fulcrum pins in the side frames. The carrying axle has as much vertical clearance through the guiding axle as is required by the resilience of the pneumatic tire. This clearance with the car light is about ¾ in. and under load about ½ in. Should the tire become flat, which might result from a defective valve, the carrying axle can drop a distance not exceeding this clearance when the bearing housing of the driving axle comes in contact with a pad on the guiding axle. Under such conditions the weight is carried directly on the guiding axle, and the flat tire is entirely relieved of any weight so that continued operation is possible without any damage to the tire.

Because of the fact that the pneumatic tires are in contact only with the smooth inner surface of the guiding wheel, it is said that in European service the life of the tire is from 75,000 to 100,000 miles. The tires used on this car are 7.52 in. by 17 in. heavy-duty passenger-car type. The wheel base of the car now being demonstrated in America is 21 ft. 9 in. and the light weight 20,300 lb.

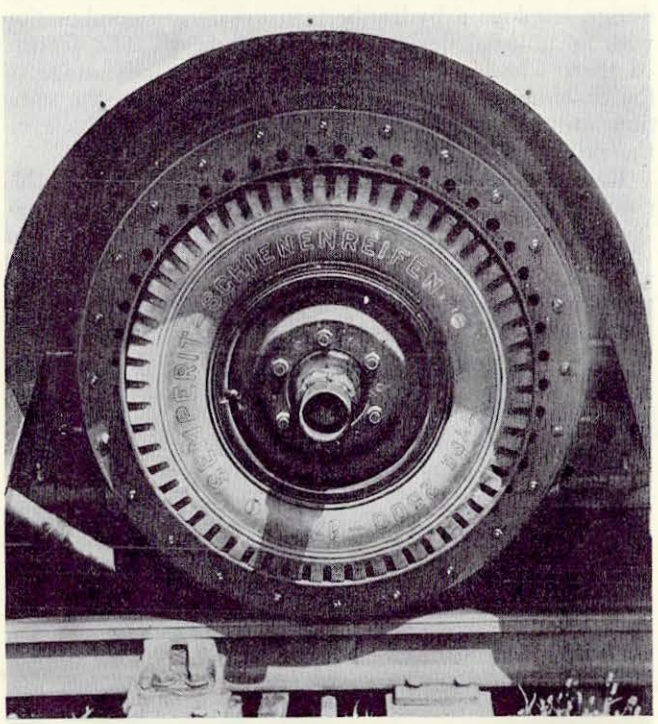
Power Plant and Transmission

The Austro-Daimler rail cars are equipped with fully equalized brakes in which two shoes operate against each brake drum. The brake drums are forged in one piece to the hubs of the guiding wheels and each brake shoe is actuated by means of an hydraulic cylinder, or a combination of hydraulic and air cylinder. In the smaller rail cars, such as the one described in this article, only hydraulic cylinders are used. The pressure is applied to a master cylinder by the operator's control wheel and is augmented by vacuum cylinders, the vacuum being obtained by the engine manifold and stored in a tank. In the larger and faster cars, such as are being operated in Europe, Westinghouse air brakes, in conjunction with Westinghouse dead-man control, are used, and in addition to the air brakes, an independent hydraulically operated handbrake is used.

The car is powered by two six-cylinder Austrian Daimler engines, one in each end of the car, having cylinders of 3⅜ in. bore by 4 9/16 in. stroke, with 245 cu. in. piston displacements and a power output of 80 b. hp. The engine is designed for heavy-duty work, having a seven-bearing crank shaft carefully balanced and a patented friction fly-wheel design which reduces vibration to a minimum. The construction of the engine is such that all parts which require renewal are readily accessible and such accessories as water pump, cam shaft and oil pump are so arranged as to be demountable without dismantling neighboring units. The engines are cooled by radiators of a special design with double fans arranged on each side of each radiator. The engine speed at a car speed of 60 m.p.h. is 2,400 r.p.m.

The automatic hydraulic transmission used with these cars is a combination of an hydraulic coupling or clutch for direct drive and hydraulic torque transmission for acceleration and up-hill haul. The direct hydraulic clutch drive is sufficient for a grade up to two per cent, and, in the case of single-unit high-speed rail cars, is capable of maximum speeds of from 65 to 90 m.p.h. The mechanical efficiency of this transmission is 98 per cent. The torque transformer used when starting and for up-hill hauls consists of a centrifugal pump and a turbine, the combined efficiency of the arrangement being in the neighborhood of 85 per cent. The change from the clutch to the transformer is accomplished by an automatic emptying of the clutch or the transformer which takes place quietly and without any appreciable effect on the smoothness of operation of the car.

Where the cars are operated at slow speed in local service, the speed of the direct clutch drive may be reduced to an equivalent of about 60 per cent of the high-speed rating. When the car runs slower than 60 per cent under full power, the transformer automatically functions. In controlling the movement of the car only a gas throttle and brake control are used. Both of these controls are combined in a wheel which the operator



The Pneumatic Tire Runs within a Steel-Tired Wheel

uses as a single control. A turn of the wheel to the left accelerates the car by opening the carbureter, while by turning it to the right, the power is reduced and the brake applied. An important advantage of this transmission lies in the fact that neither in the clutch nor in the transformer can any wear occur. There are only two moving parts, the driven wheel and the driving wheel, and there is no mechanical contact with each other or with the housing. The construction of the transmission involves no stuffing boxes or packings.

The body of this car is of light-weight steel design with a seating arrangement consisting of permanently fixed seats facing in one direction in one end of the car, and in the opposite direction in the other end. The general design of the car interior is of particularly pleasing appearance and the seating arrangement is such that it provides maximum comfort for the passengers. Entrance to the car is through side doors at the center of the car with a step arrangement such that when the door is closed, the car steps fold up out of the way.

One advantage claimed for this type of car in rail service is that the system of air suspension having steel wheels on the rails provides a metallic contact through the axles across the rail, and requires no additional track brushes or contacts to operate existing signalling systems where high-frequency current is employed for signalling work. Electrical current for lighting the car is provided by a combination Siemens starter-generator supplying current at 24 volts and 29 amp. A 24-volt, 60 amp. hr. storage battery furnishes the necessary current storage capacity.

Rail cars of this design are particularly adapted to roadbeds of extreme curvature and in European service it has been found possible to negotiate curves of 600 ft. radius at speeds of 37 m.p.h. where, by comparison, steam trains must restrict their speed to 28 m.p.h.

Operating Costs of the 40-Passenger Howesons-Austro-Daimler Rail Car

Description of costs	Cost per mile at miles per day 200 Miles	300 Miles	400 Miles
Tire replacement based on a life of 50,000 miles	$.0036	$.0036	$.0036
Gasoline consumption based on 5 miles per gal. at 12 cents	.0240	.0240	.0240
Lubrication of engines and transmissions—9/10 gal. for every 100 mi. at 75 cents per gal.	.0068	.0068	.0068
Changing axle oil every 10,000 mi.—8 gal. at 75 cents	.0006	.0006	.0006
Changing engine and transmission oil every 3,000 mi., 4 gallons at 75 cents per gal.	.0010	.0010	.0010
Maintenance—16 man-hours per week at 90 cents per hour	.0120	.0080	.0060
Interest on $25,000 cost of car, at 6 per cent per year ($1,500)	.0250	.0166	.0125
Amortization and replacement, depreciation at 20 per cent per year	.0833	.0555	.0416
Costs per mile excluding wages	$.1563	$.1161	$.0961

Costs are based on actual experience. The costs are based on the assumption that the rail car operates 300 days per year. In the calculations of the costs it is assumed that the car operates on a line which necessitates frequent stops. If the rail car did not operate on lines where frequent stops were made the saving in fuel would be $.0069 per mile.

There would be some saving on the lubrication costs if oil were reclaimed.

Although tire costs are based on a life of 50,000 miles, the usual life exceeds this figure—75,000 miles, or more, not being unusual.

Freight Car Loading

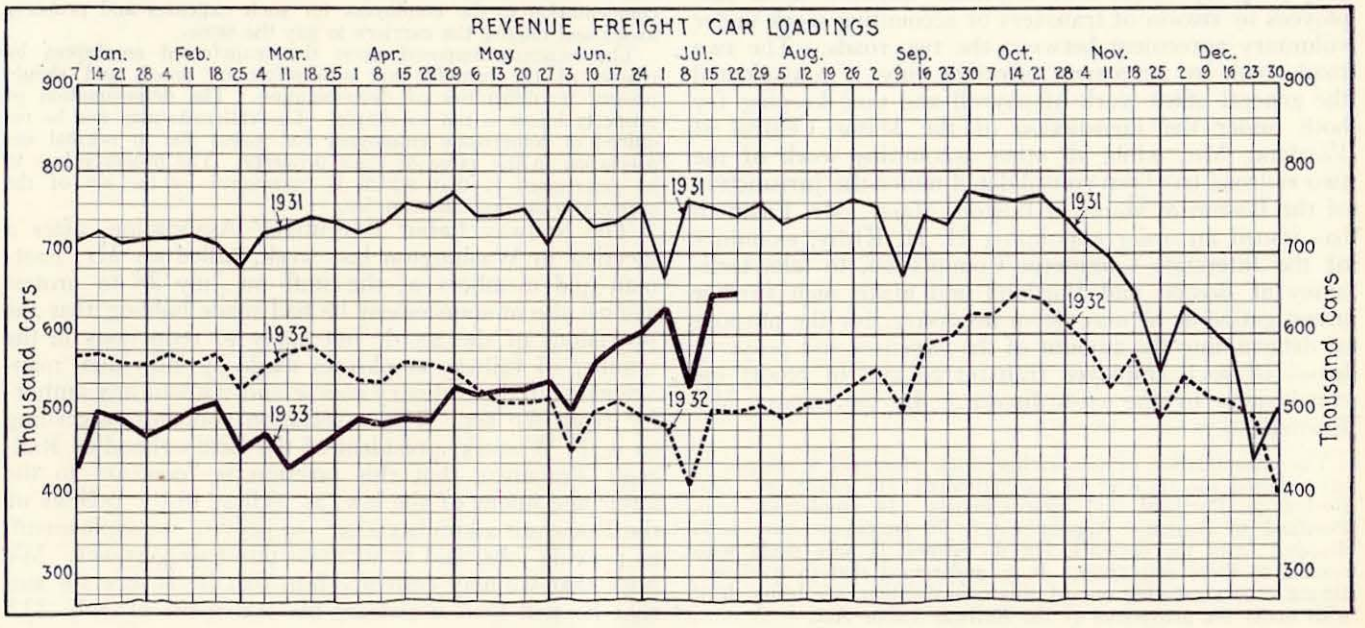
WASHINGTON, D. C.

REVENUE freight car loading for the week ended July 22 totaled 648,914 cars, an increase of 708 cars as compared with the preceding week and of 147,002 cars as compared with the corresponding week of last year. As compared with 1931 it was a decrease of only 93,567 cars and the cumulative total for the year to date is now only about 3 per cent less than that for last year. Loading of grain and grain products failed to keep up the rapid increases of recent weeks and showed a decrease as compared with the week before of 2,485 cars, and miscellaneous freight showed a decrease of 4,091 cars, but all other commodity classifications increased and all showed gains as compared with the corresponding week of last year. The summary, as compiled by the Car Service Division of the A.R.A., follows:

Revenue Freight Car Loading

Week ended Saturday, July 22, 1933

Districts	1933	1932	1931
Eastern	147,883	113,460	162,456
Allegheny	134,226	94,791	146,017
Pocahontas	47,673	32,643	46,223
Southern	90,572	71,170	104,181
Northwestern	90,515	60,367	106,551
Central Western	88,976	85,905	115,512
Southwestern	48,889	43,576	61,541
Total Western Districts	228,380	189,848	283,604
Total All Roads	648,914	501,912	742,481
Commodities			
Grain and Grain Products	48,904	41,186	52,846
Live Stock	15,653	14,195	18,310
Coal	116,399	76,708	112,168
Coke	6,464	2,471	5,055
Forest Products	28,704	15,649	27,133
Ore	26,248	6,622	35,848
Mdse. L. C. L.	171,468	167,496	212,115
Miscellaneous	235,074	177,585	279,006



Revenue Freight Car Loading—Continued

	1933	1932	1931
July 22	648,914	501,912	742,481
July 15	648,206	503,761	757,989
July 8	539,223	415,928	762,444
July 1	634,074	488,281	667,630
June 24	604,668	498,993	759,363
Cumulative total, 29 weeks	15,078,061	15,529,421	21,283,399

Car Loading in Canada

Car loading in Canada for the week ended July 22 totaled 38,989 cars, which was a decrease of 854 cars from the previous week's total, but an increase of 2,212 over last year. The index number of carloadings of the Dominion Bureau of Statistics stood at 64.08 for the July 22 week as compared with 65.44 for the preceding week.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
July 22, 1933	38,989	19,995
July 15, 1933	39,843	19,500
July 8, 1933	40,469	19,368
July 23, 1932	36,777	15,936
Cumulative Totals for Canada:		
July 22, 1933	1,020,166	519,195
July 23, 1932	1,190,411	574,556
July 18, 1931	1,398,491	781,027

Eastman Finds Employees Entitled to Pay for Transfer

WASHINGTON, D. C.

JOSEPH B. EASTMAN, federal co-ordinator of transportation, has issued an interpretation of the emergency transportation act of 1933 as indicating "a broad purpose that the benefits of economies achieved" in "carrying out the purposes" of Title I if the act "shall not be enjoyed by carriers without compensating employees justly for special expense imposed upon them in bringing these economies to pass," even though the economies result from action taken independent of the authority of the act. This interpretation was made in a report dated July 26 and made public on the following day on a request made by accounting employees of the Boston & Maine and the Maine Central that the co-ordinator provide the means for determining the amount of, and require the carriers to make just compensation for, property losses and expenses imposed upon employees by reason of transfers of accounting work under voluntary agreement between the two roads. The two roads had, by agreement effective July 1, consolidated the general office work of payroll and time keeping for both under the jurisdiction of the Maine Central at Portland, Me., while all other accounting work of the two railroad has been consolidated under the jurisdiction of the Boston & Maine at Boston, Mass. Mr. Eastman has issued an order appointing H. H. Kirby, examiner of the Interstate Commerce Commission, to take testimony at Boston and Portland and make such further investigation as he may deem necessary, for the purpose of determining the amount of the expenses and property losses of each employee transferred and to report his conclusions to the co-ordinator. In the report Mr. Eastman says:

> The consolidation of accounting work aforesaid is alleged to have caused the transfer of approximately 115 employees from Boston to Portland and approximately 118 employees from Portland to Boston. Approximately 70 employees have been dropped from the payrolls, but no request is here made with respect to these employees. It is understood that their claims, among others growing out of this consolidation, are being dealt with under the provisions of the Railway Labor Act.

Section 7 of Title I of the Emergency Railroad Transportation Act, 1933, in paragraph (b) contains restrictions on reductions in the number of employees in the service of a carrier and in their compensation "by reason of any action taken pursuant to the authority of this title." The restrictions of paragraph (b) apply only to action which may be taken by the Co-ordinator or by the Interstate Commerce Commission under authority conferred by the Title, or to action taken as the result of anything done by or through the carriers' Regional Co-ordinating Committees, the creation of which the Title directs. The provisions of this paragraph do not apply to any lawful action taken by an individual carrier or by carriers jointly which does not result from any authority conferred by the Title or involve the use of any agency or mechanism which it creates. With respect to the transfer of work here under consideration, those employees who have been dropped from the payroll must and do look elsewhere for relief, if any is to be had.

The claims here considered are those of the employees who have been retained in the service, but who have suffered what is alleged to be large expense and property loss incident to the necessary movement of their homes.

Section 7 (d) reads as follows:

> (d) The Co-ordinator is authorized and directed to provide means for determining the amount of, and to require the carriers to make just compensation for, property losses and expenses imposed upon employees by reason of transfers of work from one locality to another in carrying out the purposes of this title.

Section 7 (d) is broader in its language than is paragraph (b), in that it places a mandate upon the Co-ordinator to provide means for determining property losses and expenses imposed upon employees by reason of transfer of work from one locality to another "in carrying out the purpose of this title." The purposes of the Title are shown in Section 4 thereof to be, among other things, the avoidance by the carriers of unnecessary duplication of services and facilities, of whatsoever nature, and of other wastes and preventable expense. Plainly the voluntary action of the carriers here under consideration had for its purpose the avoidance of preventable expense, which arose out of unnecessary duplication of facilities.

The carriers contend that the provisions of paragraph (d) of Section 7 are expressly limited to action taken "in carrying out the purposes of this title," and that the language of Section 5 with respect to the Regional Co-ordinating Committees and other provisions of the Title clearly indicate that its purposes are to be carried out by use of the procedural machinery set up by the Title, which was not used here. If it had been the intention to limit the application of paragraph (d) in this way, no reason appears why Congress should not have employed the same language as is found in paragraph (b), viz: "pursuant to the *authority* of this title." The broader wording of paragraph (d) must be given appropriate significance, and it indicates a broad purpose that the benefits of economies achieved shall not be enjoyed by carriers without compensating employees justly for special expense imposed upon them in bringing these economies to pass.

Paragraph (d) of Section 7 imposes upon the Co-ordinator a mandate to provide means whereby the expenses and property losses of employees in such instances as are here involved may be determined. When the facts have been found, the Co-ordinator is then charged with a further mandate to fix the just compensation to the employees for such expenses and property losses and require the carriers to pay the same.

The expenses imposed upon the transferred employees by reason of the transfer are susceptible of proof, and should present no difficulties of determination. The determination of property losses is not so simple. The railroads may not be required to compensate employees for losses due to normal depreciation in the value of their property. The property loss to be determined is that which is occasioned by the act of the carriers in causing the transfer.

The Railway Labor Executives' Association, after a meeting in Washington last week, called on Mr. Eastman and members of the staff on July 28 to protest against the announcement he had made holding that the provisions of the act do not apply to reductions in the number of railway employees made by individual managements in the ordinary course and without any authority from the act. The association contends, according to A. F. Whitney, president of the Brotherhood of Railroad Trainmen, that this position is "contrary to the letter and intent of the law, as well as to the policies of the Roosevelt administration—to prevent unemployment, to provide jobs, and to increase purchasing power. We hope that we may convince him that he is in error and that he will then withdraw his statement of July 22."

Eastman Favors Federal Aid to Eliminate Crossings

JOSEPH B. EASTMAN, Federal Co-ordinator of Transportation, has made public two letters addressed by him to Secretary of the Interior Ickes (in the latter's capacity as Chairman of the Special Board for Public Works, which is spending $3,300,000,000 on such projects) in which he presents the advantages of allocating a substantial portion of the $400,000,000 highway appropriation to grade crossing elimination.

Stating that he has no official responsibility in the matter, but feels warranted in discussing it because of its relation to his work, Mr. Eastman's first letter says that the rules for road expenditures promulgated by the Secretary of Agriculture place grade crossing elimination last on the priority list, whereas the Bureau of Public Roads assigned them to second place. Continuing, his first letter reads in part as follows:

Naturally I do not know the reasons which the Secretary of Agriculture had for placing grade crossing elimination last in the list, and they may be very good reasons. However, I do know that grade crossing elimination is a matter of very great importance from the standpoint of public safety, and it seemed to me that you should have the benefit of our statistics on that point.

In 1931 train accidents killed 4853 and injured 20,057 persons. Of these, 1811 were killed and 4657 were injured in accidents at highway grade crossings. In contrast, only 40 railroad passengers were killed and 2102 injured, and some of these were involved in highway crossing accidents. Such accidents have become by far the most prolific source of loss of life from the operation of the railroads, with the possible exception of the trespassers on railroad property who are killed.

The casualties from such highway crossings accidents mounted rapidly and steadily, until they reached a peak in 1929 with 2485 killed and 6804 injured. Since that time there has been some decrease, and I suppose that it has been due to better protection of the crossings as well as to decreased traffic.

Money spent in elimination of the most dangerous grade crossings would, therefore, be money exceedingly well spent from the standpoint of public safety.

Grade crossing elimination has been a most painful thorn in the flesh of the railroads. The conditions which impel such elimination with continually increasing force have been created, not by the railroads, but by ther competitors, the motor vehicles. From a railroad standpoint, moreover, the heavy capital expenditures involved in such elimination fall far short of paying their way.

My belief is strong that use of the public works fund in the elimination of railroad grade crossings would be most beneficial to the railroads and to the country as a whole, having in mind not only public safety, but railroad traffic and employment and other employment as well.

Mr. Eastman's second letter dealt with the amount of labor required "on the job" in the elimination of grade crossings, and referred to a study of the subject made by a group of engineers for the Association of Railway Executives and also to studies on the same subject by the I. C. C. Bureau of Valuation. "Our engineers," said Mr. Eastman, "believe it [the percentage paid to labor on the job] would run about 35 per cent generally. In contrast, the similar ratio in the case of highway construction work is probably under 20 per cent."

Communications . . .

New Wage System For Train Service

WEST PALM BEACH, FLA.

TO THE EDITOR:

Now that a temporary truce has been reached on the railway wage question, why not have the general managers of the railways and the railway labor executives appoint a committee to work out an hourly wage system to take the place of the present antiquated mileage system?

The argument for the mileage system is that it has proved satisfactory for a number of years, but in considering that fact one must remember that there has been a comparatively small change in train speed in the past 40 years and most of the change that has been made has been due to eliminating delays, such as waits at passing tracks, delays in intermediate yards, etc., and very little to actually increasing the running speed of trains. It is now apparent that we are entering a new era of railroading, where, if the roads are to survive, there will have to be a radical speeding up of the service, both freight and passenger, and it is easy to see that the roads are going to be opposed to paying the same rate per mile for trains running 40 miles per hour for freight trains, and 70 miles per hour for passenger trains, as they have been paying for trains running 12½ and 20 miles, respectively.

The mileage contracts have become so cluttered up with extras and differentials that it is impossible for a workman not connected with the railroads to make head or tail of them. For instance, in reading the average agreement one would conclude that 2,600 miles would constitute a month's work, yet during all this depression, with men of many years' seniority cut off and dropping out of the unions because of inability to pay dues, not one of the brotherhoods in road service has been willing to work for as little as 2,600 miles per month, many individuals arguing that they could not live on that amount, so even now one can see that 100 miles is not a measure of a day's work.

The railroads will have to approach this problem with a more open mind than they have in the past, for all movements toward an hourly wage in the past have sought to take all the savings over the mileage rate for the railroads themselves. If the hourly plan is to succeed the savings will have to be divided between the roads and the employees. J. H. JONES.

Baggage Rules Relaxed

MINNEAPOLIS, MINN.

TO THE EDITOR:

On page 134 of the *Railway Age* of July 15 there is an item under the caption "Baggage Rules Relaxed." I think you will find that in addition to the New York Central, other carriers in the Trunk Line and Central territory have adopted the same practice, baggage tariffs being issued jointly by an agent "acting under powers of attorney on file with the Interstate Commerce Commission," the same as are given to G. J. Maguire, Chicago, for the publishing of "Western Baggage Tariff," current issue 25-8 and supplement 6, the latter effective August 1, 1933. Western Lines, to my knowledge, have not "eliminated from their baggage tariff the rule forbidding agents to check empty trunks." Neither is there any provision in the issue mentioned "to charge for storage of only one parcel where two or more small packages, or an umbrella and suitcase, can be securely fastened together."

All the other data which are included in the article above referred to commencing with "Elimination of deposit" and ending with "acceptance of baggage in cardboard boxes" have been included in the Western Lines tariff, some of which provisions have been in effect for several months.

The "accepting of sample baggage in boxes" covers samples such as adding and calculating machines, cash registers, computing scales, cream separators, Load-o-meters and radio outfits. Under the current Western Baggage tariff "typewriters in trunks, also in wooden, leather or substantial rigid containers when locked" are checkable as part of passengers' "baggage."

O. A. ROEDELL,
Secretary, Western Association of General Baggage Agents.

Operating Statistics of Large Steam Railways—Selected Items for the Month of May, 1933,

Region, road and year	Average miles of road operated	Train-miles	Locomotive-miles: Principal and helper	Locomotive-miles: Light	Car-miles: Loaded (thousands)	Car-miles: Per cent loaded	Ton-miles (thousands): Gross, Excluding locomotives and tenders	Ton-miles (thousands): Net Revenue and non-revenue	Average number of locomotives on line: Serviceable	Unserviceable	Per cent unserviceable	Stored
New England Region:												
Boston & Albany....1933	402	112,086	118,553	8,858	3,185	67.5	160,708	51,405	55	51	48.2	15
1932	402	117,897	122,606	7,434	3,059	64.4	160,386	52,004	66	54	45.3	21
Boston & Maine....1933	2,052	243,904	273,590	23,902	8,669	69.8	436,806	155,821	118	166	58.5	18
1932	2,058	260,935	298,684	26,081	8,640	68.8	448,190	164,103	144	147	50.5	28
N. Y., New H. & Hartf....1933	2,042	324,278	392,298	21,656	10,517	65.8	551,724	190,787	226	133	37.0	53
1932	2,056	336,874	396,633	20,846	10,317	64.0	550,665	190,955	210	135	39.2	11
Great Lakes Region:												
Delaware & Hudson....1933	848	178,157	234,648	25,120	5,761	61.7	346,913	148,054	252	27	9.8	170
1932	848	204,575	262,013	24,570	6,204	60.0	383,960	167,087	251	24	8.7	153
Del., Lack. & Western....1933	998	319,366	353,277	40,881	10,298	64.2	580,443	208,757	203	65	24.3	68
1932	998	319,500	353,240	42,160	10,084	65.9	568,341	215,903	209	58	21.8	62
Erie (incl. Chi. & Erie)....1933	2,316	614,132	638,410	45,822	24,762	61.4	1,526,103	551,116	305	199	39.4	98
1932	2,316	618,103	639,155	49,297	24,785	60.2	1,516,017	534,230	350	146	29.5	121
Grand Trunk Western....1933	1,003	198,241	199,653	1,697	4,936	58.9	298,739	94,948	77	74	48.8	11
1932	1,021	192,493	194,195	1,571	4,469	59.2	267,756	86,125	101	50	33.4	36
Lehigh Valley 1933	1,341	342,519	356,457	28,656	10,359	62.8	612,986	224,955	170	149	46.8	30
1932	1,343	350,064	366,005	34,269	10,161	61.7	607,588	227,813	198	145	42.4	43
Michigan Central 1933	1,962	365,371	365,632	10,513	11,365	58.9	671,168	206,167	134	67	33.2	44
1932	2,115	356,051	356,309	10,204	10,419	58.7	606,771	185,664	123	80	39.3	37
New York Central....1933	6,320	1,243,701	1,335,236	86,768	47,616	60.2	2,894,239	1,109,371	541	627	53.7	71
1932	6,329	1,330,494	1,405,728	86,216	46,916	58.9	2,907,947	1,120,083	626	654	51.1	104
New York, Chi. & St. L....1933	1,660	451,367	476,034	4,829	13,391	59.4	801,843	267,107	114	99	46.3	15
1932	1,660	433,151	444,291	4,289	12,789	60.2	742,472	239,408	144	92	39.0	40
Pere Marquette 1933	2,254	308,620	323,131	4,114	7,044	57.0	458,604	163,824	120	54	30.9	23
1932	2,243	275,469	285,133	2,717	5,960	58.2	376,084	134,762	135	39	22 1	35
Pitts. & Lake Erie....1933	231	56,543	58,316	830	2,258	56.1	195,518	105,493	27	44	61.5	6
1932	235	50,883	51,860	1,243	2,021	55.3	168,289	90,606	43	42	49.4	22
Wabash 1933	2,453	492,162	497,706	10,128	14,740	61.6	845,617	254,382	171	172	50.1	25
1932	2,497	501,269	516,699	10,214	15,141	61.9	860,616	265,366	228	142	38.4	48
Central Eastern Region:												
Baltimore & Ohio....1933	6,283	1,161,214	1,409,226	149,650	34,483	60.9	2,270,375	965,914	716	590	45.2	182
1932	6,277	1,220,857	1,370,031	129,897	32,718	59.6	2,137,753	884,715	847	485	36.4	313
Big Four Lines....1933	2,787	554,561	577,521	17,677	15,833	61.1	984,972	405,791	266	163	38.0	51
1932	2,790	563,156	578,087	11,066	14,479	61.0	893,522	371,662	238	174	42.3	37
Central of New Jersey....1933	692	123,899	138,655	22,844	3,932	57.7	263,435	115,920	116	62	34.9	64
1932	692	150,919	161,885	20,915	4,114	54.5	282,629	121,295	117	61	34.2	45
Chicago & Eastern Ill....1933	939	169,792	170,595	2,539	3,158	60.9	195,371	73,603	63	103	62.2	23
1932	939	148,200	148,635	2,786	2,923	61.3	179,223	69,441	97	69	41.3	54
Elgin, Joliet & Eastern....1933	446	74,060	74,719	1,072	1,791	58.7	139,824	66,021	73	15	16.7	28
1932	447	57,346	57,727	1,787	1,273	58.1	93,146	42,598	84	7	7.4	42
Long Island 1933	396	28,669	29,386	12,010	303	54.4	21,979	8,581	29	18	38.9	3
1932	396	35,337	36,604	13,205	373	53.4	28,045	10,310	42	6	12.2	9
Pennsylvania System 1933	10,525	2,392,703	2,661,094	269,903	82,804	61.6	5,377,139	2,243,855	1,573	919	36.9	556
1932	10,536	2,366,260	2,643,576	255,596	79,084	60.7	5,134,899	2,114,919	2,129	407	16.0	1,019
Reading 1933	1,454	351,839	380,192	40,807	9,606	59.1	675,436	306,798	282	101	26.4	117
1932	1,453	389,259	417,342	36,284	9,803	57.6	696,104	313,377	302	100	24.9	103
Pocahontas Region:												
Chesapeake & Ohio....1933	3,140	725,724	761,304	30,314	30,708	54.8	2,596,884	1,374,022	528	165	23.8	254
1932	3,136	699,374	726,691	23,378	27,094	55.2	2,276,153	1,208,058	538	113	17.3	258
Norfolk & Western....1933	2,204	507,672	524,585	20,592	18,651	59.9	1,485,207	764,863	421	60	12.5	211
1932	2,258	465,039	480,395	20,284	15,944	58.5	1,276,865	650,174	449	36	7.5	231
Southern Region:												
Atlantic Coast Line....1933	5,144	600,974	602,597	8,389	12,123	63.0	619,533	197,398	360	125	25.7	101
1932	5,144	581,599	582,773	8,128	11,411	62.9	600,911	203,321	375	96	20.4	104
Central of Georgia....1933	1,904	196,960	197,758	2,846	4,453	69.4	232,739	85,100	86	53	38.3	..
1932	1,900	183,522	185,295	3,261	3,858	68.6	203,355	74,292	90	53	37.1	3
Ill. Cent. (incl. Y. & M. V.)1933	6,658	1,266,141	1,288,002	21,479	28,539	60.1	1,789,045	668,054	605	340	36.0	25
1932	6,659	1,197,802	1,207,503	19,667	27,876	60.7	1,738,134	654,416	746	193	20.5	83
Louisville & Nashville....1933	5,121	897,728	953,757	21,673	19,196	58.8	1,280,641	552,358	345	350	50.3	60
1932	5,263	840,251	882,690	21,754	16,458	58.1	1,102,123	469,108	452	259	36.4	177
Seaboard Air Line....1933	4,373	455,014	471,748	3,147	10,540	65.0	590,316	203,989	232	63	21.4	37
1932	4,437	468,206	480,899	4,059	9,911	60.8	570,112	179,847	260	35	11.9	46
Southern 1933	6,602	1,064,005	1,077,055	18,642	24,902	65.8	1,339,346	482,776	726	197	21.4	227
1932	6,669	1,006,458	1,015,161	16,695	21,540	65.0	1,161,381	409,252	703	239	25.4	220
Northwestern Region:												
Chi. & North Western....1933	8,443	855,140	896,364	19,916	21,742	61.7	1,305,802	434,841	580	240	29.2	216
1932	8,443	819,982	847,787	14,864	19,263	64.1	1,092,866	356,369	640	168	20.8	301
Chicago Great Western....1933	1,463	196,257	197,666	18,299	5,990	59.1	372,425	127,193	60	39	38.9	3
1932	1,448	180,096	180,098	15,129	5,770	60.4	346,985	120,126	62	50	45.0	5
Chi., Milw., St. P. & Pac...1933	11,234	1,109,115	1,166,572	53,855	28,785	59.5	1,843,569	723,681	691	203	22.7	338
1932	11,266	1,060,169	1,122,691	52,436	26,351	61.3	1,646,838	645,878	737	166	18.4	377
Chi., St. P., Minn. & Om..1933	1,681	199,227	206,538	8,293	4,086	66.6	243,162	99,266	135	38	21.9	71
1932	1,714	206,731	212,500	9,286	3,817	66.8	217,424	85,271	150	23	13.6	78
Great Northern 1933	8,424	528,900	533,293	15,229	16,310	70.0	968,757	438,760	465	147	24.0	165
1932	8,308	528,695	531,956	14,243	14,191	66.9	840,491	345,854	465	155	24.9	154
Minneap., St. P. & S. St. M. 1933	4,291	323,331	326,568	1,870	6,816	66.5	385,283	160,557	138	41	22.7	13
1932	4,325	331,669	335,757	2,015	6,276	66.7	341,268	130,942	146	53	26.5	16
Northern Pacific 1933	6,413	458,210	487,357	31,787	14,306	68.0	823,721	347,860	393	131	25.0	111
1932	6,397	443,930	467,177	28,396	12,905	69.0	733,444	288,844	376	139	27.1	125
Oreg.-Wash. R. R. & Nav..1933	2,140	123,479	127,587	7,466	3,318	72.9	178,016	71,023	78	42	34.7	27
1932	2,219	139,819	143,544	7,157	3,029	70.6	164,419	62,390	99	32	24.5	40
Central Western Region:												
Alton 1933	952	174,824	176,873	1,007	**3,644**	**52.2**	248,339	73,455	55	47	46.5	5
1932	990	187,602	189,125	884	3,792	53.8	255,507	75,981	92	19	17.2	29
Atch., Top. & S. Fe (incl. P. & S. F.). 1933	11,609	1,256,214	1,340,084	56,596	33,438	64.5	1,973,492	656,242	653	278	29.8	251
1932	11,599	1,249,672	1,329,276	52,732	33,214	60.4	2,049,945	652,489	727	207	22.2	320
Chi., Burl. & Quincy....1933	9,157	1,011,287	1,037,498	29,367	25,109	60.6	1,491,567	602,346	408	130	24.2	47
1932	9,210	931,132	949,180	25,133	22,481	61.8	1,245,003	498,959	482	131	21.5	84
Chi., Rock I. & Pac. (incl. Chi., Rock I. & Gulf)...1933	8,333	961,567	978,727	5,062	20,934	57.9	1,308,833	455,637	451	161	26.3	101
1932	8,342	1,011,643	1,030,457	4,698	22,439	57.0	1,396,222	468,014	524	146	21.8	149
Denver & R. G. Wn....1933	2,514	194,419	211,697	20,985	5,788	64.9	336,966	127,999	196	45	18.7	63
1932	2,557	173,011	186,301	18,482	5,195	69.5	282,403	110,444	206	38	15.6	75
Los Angeles & Salt Lake...1933	1,239	133,624	146,270	15,430	3,745	70.0	211,253	78,439	75	36	32.5	12
1932	1,240	134,735	148,883	15,984	4,095	70.7	224,200	82,648	87	21	19.2	30
Oregon Short Line....1933	2,439	203,086	208,331	9,493	4,863	67.0	276,709	103,943	130	61	32.1	52
1932	2,483	193,761	197,229	7,339	4,995	65.8	283,613	101,209	158	20	11.2	87
Southern Pacific—Pacific Lines 1933	8,892	953,694	1,019,909	100,669	30,301	60.7	1,868,111	565,552	507	395	43.8	178
1932	8,911	1,102,168	1,178,888	120,444	33,437	59.2	2,119,926	625,123	564	370	39.6	175
Union Pacific 1933	3,768	746,935	771,435	37,443	27,204	65.9	1,611,188	528,623	353	118	25.1	171
1932	3,768	724,549	741,244	33,093	28,160	66.2	1,561,947	512,471	386	76	16.5	197
Southwestern Region:												
Gulf, Colo. & S. Fe....1933	1,943	187,457	190,484	2,466	4,659	62.5	284,403	109,205	90	38	29.4	22
1932	1,943	181,727	185,145	2,238	4,287	56.9	285,606	108,783	103	25	19.7	39
Mo.-Kans.-Texas Lines 1933	3,282	343,386	345,484	5,345	8,137	57.7	490,070	164,002	158	74	31.8	79
1932	3,282	323,262	325,242	4,346	7,863	59.8	467,775	163,012	166	62	27.1	91
Missouri Pacific 1933	7,385	1,038,468	1,069,931	22,417	28,316	61.5	1,742,071	627,264	419	160	27.6	156
1932	7,409	973,653	981,801	20,437	24,498	61.7	1,469,299	498,279	471	143	23.2	212
St. Louis-San Francisco....1933	5,193	603,641	608,205	6,460	12,706	59.0	800,228	300,864	392	76	16.2	148
1932	5,193	571,084	574,622	6,711	12,000	58.8	742,518	267,580	416	84	16.8	146
St. Louis Southwestern Lines 1933	1,872	213,123	223,398	2,993	5,578	56.9	351,197	115,332	103	27	21.0	27
1932	1,902	192,418	193,824	2,642	4,836	57.4	296,489	86,969	110	30	21.3	40
Texas & New Orleans....1933	4,474	459,561	460,573	5,043	10,260	61.5	607,979	202,169	218	93	29.8	51
1932	4,604	472,382	473,830	7,143	10,267	65.2	587,797	200,652	227	105	31.8	60
Texas & Pacific....1933	1,946	243,660	243,660	1,413	7,412	58.0	468,781	163,319	187	61	24.5	87
1932	1,946	250,538	250,538	1,630	6,459	58.4	405,178	120,878	172	75	30.4	57

Compiled by the Bureau of Statistics, Interstate Commerce Commission. Subject to revision.

Compared with May, 1932, for Roads with Annual Operating Revenues Above $25,000,000

Region, road and year	Average number of freight cars on line: Home	Foreign	Total	Per cent unserviceable	Gross ton-miles per train-hour, excluding locomotives and tenders	Gross ton-miles per train-mile, excluding locomotives and tenders	Net ton-miles per train-mile	Net ton-miles per loaded car-mile	Net ton-miles per car-day	Car-miles per car-day	Net ton-miles per mile of road per day	Pounds of coal per 1,000 gross ton-miles, including locomotives and tenders	Locomotive-miles per locomotive-day
New England Region:													
Boston & Albany....1933	4,533	3,150	7,683	38.9	22,825	1,434	459	16.1	216	19.8	4,128	158	39.0
1932	4,107	2,487	6,594	28.2	21,768	1,360	441	17.0	254	23.2	4,176	153	35.0
Boston & Maine....1933	10,586	7,547	18,133	21.5	24,691	1,785	637	18.0	276	22.0	2,441	102	33.7
1932	10,781	6,701	17,482	14.1	23,739	1,697	621	19.0	299	22.9	2,538	102	36.0
N. Y., New H. & Hartf....1933	16,384	9,210	25,594	10.3	25,846	1,701	588	18.1	240	20.1	3,013	103	37.2
1932	16,235	8,935	25,170	8.5	24,452	1,635	567	18.5	245	20.6	2,997	110	39.1
Great Lakes Region:													
Delaware & Hudson....1933	12,629	2,138	14,767	3.9	24,822	1,947	831	25.7	323	20.4	5,631	114	30.0
1932	12,195	2,588	14,783	3.6	25,992	1,877	817	26.9	365	22.6	6,355	116	33.6
Del., Lack. & Western....1933	18,856	3,598	22,454	11.4	27,426	1,817	654	20.3	300	23.0	6,747	127	47.5
1932	19,722	3,488	23,210	7.9	25,379	1,779	676	21.4	300	21.3	6,978	136	47.8
Erie (incl. Chi. & Erie)...1933	35,075	10,472	45,547	5.9	39,641	2,485	897	22.3	390	28.6	7,676	95	43.8
1932	36,518	10,531	47,049	4.5	38,339	2,453	864	21.6	366	28.2	7,441	99	44.8
Grand Trunk Western....1933	5,390	7,027	12,417	20.5	27,956	1,507	479	19.2	247	21.8	3,054	99	43.2
1932	4,401	7,501	11,902	11.7	26,138	1,391	447	19.3	233	20.5	2,720	101	41.7
Lehigh Valley....1933	19,095	3,822	22,917	22.7	31,563	1,790	657	21.7	317	23.2	5,412	132	38.9
1932	23,014	4,101	27,115	13.1	30,179	1,736	651	22.4	271	19.6	5,472	132	37.6
Michigan Central....1933	26,521	16,960	43,481	12.2	34,255	1,837	564	18.1	153	14.3	3,390	112	60.5
1932	25,247	16,282	41,529	6.2	32,239	1,704	521	17.8	144	13.8	2,832	112	58.2
New York Central....1933	80,427	56,940	137,367	26.5	37,066	2,327	892	23.3	261	18.6	5,663	94	39.3
1932	78,853	68,365	147,218	15.0	34,836	2,186	842	23.9	245	17.4	5,709	98	37.6
New York, Chi. & St. L...1933	11,611	5,919	17,530	8.0	32,446	1,776	592	19.9	492	41.5	5,190	98	72.7
1932	16,095	5,428	21,523	12.0	30,542	1,714	553	18.7	359	31.8	4,652	94	61.1
Pere Marquette....1933	12,898	3,824	16,722	2.8	24,983	1,486	531	23.3	316	23.8	2,344	91	60.8
1932	13,803	3,148	16,951	3.1	23,172	1,365	489	22.6	256	19.5	1,938	96	53.2
Pitts. & Lake Erie....1933	17,614	7,920	25,534	31.5	47,945	3,458	1,866	46.7	133	5.1	14,719	98	26.8
1932	18,230	6,064	24,294	26.9	44,287	3,307	1,781	44.8	120	4.8	12,428	101	20.3
Wabash....1933	17,452	7,309	24,761	5.0	35,424	1,718	517	17.3	331	31.2	3,345	107	47.9
1932	19,265	7,065	26,330	6.9	34,484	1,717	529	17.5	325	30.0	3,429	105	46.0
Central Eastern Region:													
Baltimore & Ohio....1933	95,419	16,151	111,570	19.5	25,936	1,955	832	28.0	279	16.4	4,960	143	38.5
1932	97,935	14,591	112,526	11.2	24,552	1,751	725	27.0	254	15.7	4,546	145	36.3
Big Four Lines....1933	20,220	18,730	38,950	20.2	31,243	1,776	732	25.6	336	21.5	4,697	116	44.8
1932	23,053	16,062	39,115	14.5	29,336	1,587	660	25.7	307	19.6	4,297	114	46.1
Central of New Jersey....1933	18,003	5,270	23,273	27.9	25,716	2,126	936	29.5	161	9.5	5,404	129	29.3
1932	17,882	5,506	23,388	20.6	25,199	1,873	804	29.5	167	10.4	5,652	147	33.1
Chicago & Eastern Ill....1933	6,185	1,902	8,087	18.7	21,144	1,151	433	23.3	294	20.7	2,529	136	33.8
1932	6,353	1,745	8,098	14.4	21,764	1,209	469	23.8	277	19.0	2,386	131	29.5
Elgin, Joliet & Eastern....1933	9,702	3,673	13,375	23.9	16,711	1,888	891	36.9	159	7.4	4,775	120	27.8
1932	9,686	3,632	13,318	10.1	14,488	1,624	743	33.5	103	5.3	3,074	126	21.1
Long Island....1933	796	3,302	4,098	1.9	6,129	767	299	28.3	68	4.4	699	265	28.4
1932	789	4,023	4,812	.7	6,423	794	292	27.6	69	4.7	840	333	33.8
Pennsylvania System....1933	254,035	42,526	296,561	10.3	31,968	2,247	938	27.1	244	14.6	6,877	120	37.9
1932	251,552	46,675	298,227	6.8	31,343	2,170	894	26.7	229	14.1	6,475	124	36.9
Reading....1933	39,432	6,654	46,086	21.3	23,160	1,920	872	31.9	215	11.4	6,807	144	35.4
1932	39,340	6,810	46,150	7.5	22,647	1,788	805	32.0	219	11.9	6,958	140	36.4
Pocahontas Region:													
Chesapeake & Ohio....1933	47,799	9,524	57,323	1.8	50,578	3,578	1,893	44.7	773	31.5	14,118	72	36.9
1932	49,262	6,986	56,248	2.5	46,823	3,255	1,727	44.6	693	28.2	12,428	73	37.2
Norfolk & Western....1933	40,726	4,164	44,890	3.4	43,786	2,926	1,507	41.0	550	22.4	11,194	108	36.6
1932	42,181	3,531	45,712	2.1	40,912	2,746	1,398	40.8	459	19.2	9,287	113	33.3
Southern Region:													
Atlantic Coast Line....1933	27,756	6,166	33,922	23.1	19,602	1,031	328	16.3	188	18.3	1,238	115	40.7
1932	28,696	5,737	34,433	8.0	19,829	1,033	350	17.8	190	17.0	1,275	117	40.5
Central of Georgia....1933	7,335	1,856	9,191	25.8	21,093	1,182	432	19.1	299	22.5	1,442	125	46.6
1932	7,809	1,314	9,123	22.2	19,896	1,108	405	19.3	263	19.9	1,262	130	42.5
Ill. Cent. (incl. Y. & M. V.).1933	54,885	12,474	67,359	28.1	24,681	1,413	528	23.4	320	22.7	3,237	135	44.7
1932	55,888	11,320	67,208	16.8	23,922	1,451	546	23.5	314	22.0	3,170	129	42.2
Louisville & Nashville....1933	55,007	7,244	62,251	24.0	21,400	1,427	615	28.8	286	16.9	3,479	139	45.3
1932	56,386	6,895	63,281	16.6	19,943	1,312	558	28.5	239	14.4	2,876	152	41.0
Seaboard Air Line....1933	12,833	4,399	17,232	7.4	21,280	1,297	448	19.4	382	30.3	1,505	121	52.0
1932	15,560	4,344	19,904	6.8	20,228	1,218	384	18.1	291	26.4	1,308	123	53.0
Southern....1933	32,178	17,378	49,556	19.3	20,935	1,259	454	19.4	314	24.6	2,359	141	38.3
1932	42,810	22,440	65,250	14.4	19,590	1,154	407	19.0	202	16.4	1,979	150	35.4
Northwestern Region:													
Chi. & North Western....1933	45,358	16,339	61,697	10.4	23,122	1,527	509	20.0	227	18.4	1,661	121	36.1
1932	45,822	15,978	61,800	6.7	20,028	1,333	435	18.5	186	15.7	1,362	126	34.4
Chicago Great Western....1933	4,197	2,499	6,696	13.3	33,160	1,898	648	21.2	613	48.9	2,804	130	70.5
1932	5,112	2,867	7,979	12.3	33,043	1,927	667	20.8	486	38.6	2,676	126	56.1
Chi., Milw., St. P. & Pac..1933	60,453	12,646	73,099	4.2	25,291	1,662	652	25.1	319	21.3	2,078	116	44.0
1932	64,615	10,730	75,345	3.4	23,590	1,553	609	24.5	277	18.4	1,849	118	42.0
Chi., St. P., Minneap. & Om....1933	2,246	6,135	8,381	10.0	17,677	1,221	498	24.3	382	23.6	1,905	105	40.1
1932	2,283	7,377	9,660	7.7	15,370	1,052	412	22.3	285	19.1	1,605	118	41.3
Great Northern....1933	44,005	7,627	51,632	7.0	27,672	1,832	830	26.9	274	14.6	1,680	118	28.9
1932	44,995	5,955	50,950	7.4	24,439	1,590	654	24.4	219	13.4	1,343	127	28.4
Minneap., St. P. & S. St. M....1933	19,242	2,512	21,754	4.2	18,772	1,192	497	23.6	239	15.2	1,207	103	59.2
1932	20,956	2,574	23,530	4.0	16,486	1,029	395	20.9	180	12.9	977	109	54.8
Northern Pacific....1933	43,302	3,539	46,841	11.6	27,902	1,798	759	24.3	240	14.5	1,750	135	31.9
1932	43,406	3,446	46,852	9.8	25,136	1,652	651	22.4	199	12.9	1,456	141	31.0
Oreg.-Wash. R. R. & Nav..1933	8,093	1,964	10,057	8.3	23,065	1,442	575	21.4	228	14.6	1,071	140	36.5
1932	9,555	1,518	11,073	15.8	20,130	1,176	446	20.6	182	12.5	907	160	37.2
Central Western Region:													
Alton....1933	3,547	4,857	8,404	19.4	27,480	1,421	420	20.2	282	26.8	2,490	126	56.3
1932	5,143	3,923	9,066	13.4	27,634	1,362	405	20.0	270	25.1	2,475	120	55.2
Atch., Top. & S. Fe (incl. P. & S. F.)....1933	66,831	7,374	74,205	12.3	29,412	1,571	522	19.6	285	22.5	1,824	111	48.4
1932	71,446	8,465	79,911	11.4	30,076	1,640	522	19.6	263	22.2	1,815	105	47.7
Chi., Burl. & Quincy....1933	41,904	10,952	52,856	10.3	25,074	1,475	596	24.0	368	25.3	2,122	117	63.9
1932	47,190	10,009	57,199	7.2	21,789	1,337	536	22.2	281	20.5	1,748	124	51.3
Chi., Rock I. & Pac. (incl. Chi., Rock I. & Gulf)....1933	39,780	10,645	50,425	19.2	22,821	1,361	474	21.8	291	23.1	1,764	135	51.9
1932	42,475	9,862	52,337	15.2	23,371	1,380	463	20.9	288	24.3	1,810	134	49.8
Denver & R. G. Wn....1933	14,383	2,689	17,072	4.6	26,811	1,733	658	22.1	242	16.8	1,642	164	31.2
1932	14,556	2,582	17,138	3.3	24,632	1,632	638	21.3	208	14.1	1,393	158	27.1
Los Angeles & Salt Lake..1933	4,513	798	5,311	7.6	27,734	1,581	587	20.9	476	32.5	2,041	143	47.2
1932	4,531	945	5,476	4.3	28,029	1,664	613	20.2	487	34.1	2,150	136	49.3
Oregon Short Line....1933	10,510	2,832	13,342	18.4	23,770	1,363	512	21.4	251	17.6	1,375	120	36.8
1932	9,849	2,781	12,630	7.9	24,863	1,464	522	20.3	258	19.4	1,315	115	37.2
Southern Pacific—Pacific Lines....1933	40,351	22,092	62,443	13.8	32,121	1,959	593	18.7	292	25.8	2,052	108	40.1
1932	44,431	22,855	67,286	11.7	30,879	1,923	567	18.7	300	27.1	2,263	108	44.9
Union Pacific....1933	25,689	6,757	32,446	21.5	47,074	2,157	708	19.4	526	41.0	4,525	104	55.4
1932	25,171	7,079	32,250	15.1	45,433	2,156	707	18.2	513	42.6	4,387	105	54.1
Southwestern Region:													
Gulf, Colo. & S. Fe....1933	13,624	1,620	15,244	6.0	24,587	1,517	583	23.4	231	15.8	1,813	107	48.8
1932	11,550	2,648	14,198	5.8	26,258	1,572	599	25.4	247	17.1	1,806	103	47.4
Mo.-Kans.-Texas Lines....1933	10,340	2,321	12,661	6.7	25,270	1,427	478	20.2	418	35.9	1,612	92	48.8
1932	12,438	2,628	15,066	4.2	25,923	1,447	504	20.7	349	28.1	1,602	88	46.7
Missouri Pacific....1933	26,749	16,044	42,793	13.9	29,236	1,678	604	22.2	473	34.7	2,740	121	60.8
1932	32,309	9,450	41,759	13.5	27,324	1,509	512	20.3	385	30.7	2,170	120	52.7
St. Louis-San Francisco...1933	25,585	4,726	30,311	6.8	22,299	1,326	498	23.7	320	22.9	1,869	132	42.4
1932	29,493	4,915	34,408	5.1	21,917	1,300	469	22.3	251	19.1	1,662	128	37.5
St. Louis Southwestern Lines....1933	4,660	3,038	7,698	10.3	29,386	1,648	541	20.7	483	41.0	1,987	98	56.3
1932	5,872	2,328	8,200	11.6	29,096	1,541	452	18.0	342	33.2	1,475	95	45.2
Texas & New Orleans....1933	9,075	10,932	20,007	6.6	22,222	1,323	440	19.7	326	26.9	1,458	90	48.3
1932	12,930	12,139	25,069	7.9	20,578	1,244	425	19.5	258	20.3	1,406	93	46.7
Texas & Pacific....1933	5,598	5,005	10,603	14.0	28,701	1,924	670	22.0	497	38.9	2,708	80	31.9
1932	6,101	3,375	9,476	12.7	26,322	1,617	482	18.7	411	37.6	2,004	84	32.9

NEWS

Rival Organizations Seek to Organize Truckers

Among the numerous controversies being staged in Washington hotel rooms and elsewhere incident to the preparation of codes to be submitted to the National Recovery Administration the question as to which organization shall represent the motor freight carriers is still unsettled. Similar questions have also arisen as to many other industries and, in general, officials of the N. R. A. seem to favor the presentation of codes wherever possible by broad national organizations, representing various branches of some of the highly complex industries, with subdivisions of the comprehensive code for the various branches.

Two separate organizations are endeavoring to obtain support as representatives of the highway freight carriers; the American Highway Freight Association, organized by the for-hire carriers, and a proposed federation of state motor truck associations, which is favored by the National Automobile Chamber of Commerce, representing the manufacturers of motor transportation equipment.

After he had addressed a letter last week to the National Highway Users' Conference which seemed to suggest that the state truck associations formulate a code, Deputy Administrator Malcolm Muir on July 28 sent another letter to C. E. Cotterill, counsel for the American Highway Freight Association, saying he wanted to emphasize "that the decision as to what is for the best interest of the industry should be made by the industry itself" and that "whenever any trade association purporting to represent the industry or a subdivision of it files a code with the administration I shall then take every proper step to ascertain the facts as to the truly representative character of that association."

Credit Corporation to Make Further Payment

The Railroad Credit Corporation, administering funds derived from emergency rates granted by the Interstate Commerce Commission under Ex Parte 103, is now engaged in liquidating its affairs and on August 15 will make another repayment to the participating carriers.

The first distribution to the participating carriers was made on July 15, at which time they received four per cent of the amounts they have paid into the corporation, or $2,989,771, of which amount $1,221,892 was paid in cash and the remaining $1,767,879 was credited on the obligations of carriers indebted to the fund.

The second distribution, to be made on August 15, will amount to one per cent of the amounts that the participating carriers have paid into the corporation, or $742,403. This will mean that when the second distribution has been made, a total of $3,732,174 will have been repaid to the participating carriers.

In the fifteen months ended on March 31, 1933, that the Marshalling and Distributing Plan administered by the Railroad Credit Corporation was in operation, the participating carriers paid to the corporation net revenues derived from the emergency rates amounting to $74,744,279. It was from this fund that the corporation made loans to various railroads to prevent their defaulting on fixed interest obligations.

Use Railroads or Lose Them

"For a long period of years, almost from its beginning, Corning has received a large share of its economic support from the railroads. It is probably unnecessary to say anything about the general trend of this support during the last two or three years. Retrenchment has resulted in the reduction of service and employment on a number of occasions.

"You already know that the Erie Railroad discontinued two more of its passenger trains through this community recently. The New York Central Railroad has been contemplating the elimination of all of its passenger service, but this plan has now been indefinitely postponed. These very drastic moves would certainly not be made if they were not absolutely necessary.

"The big question of what to do about it is before us, and, while we are somewhat inclined to be overwhelmed by the problem, we need to think it through seriously. The railroads that serve Corning are among the heaviest taxpayers on the roll. They are also among the largest employers. The transportation service that they provide is absolutely essential for the continued functioning of business.

"As a shipper or receiver you can readily realize the paralysis that would come about in the absence of adequate transportation service. In view of this, plus what the railroads mean to this community from the standpoint of economic support, makes us feel that we should ask your most careful consideration of the situation, and suggest that you shift what business you can to the railroads whenever it is at all possible."

From a recent bulletin issued by the Chamber of Commerce of Corning, N. Y.

Railroads Oppose Further Barge Canal Extravagance

The application of New York state for $27,500,000 out of the $3,300,000,000 public works fund for deepening the Waterford-Oswego section of the New York State Barge Canal to fourteen feet was taken under consideration after a hearing in Washington on July 31 by the Board for Rivers and Harbors of the Army Engineers.

Vigorous objection to the project was expressed by representatives of the Baltimore & Ohio, Erie, Delaware, Lackawanna & Western, Lehigh Valley, Chesapeake & Ohio and New York Central, who held that the project was unfair to the railroads, which are the nation's heaviest taxpayers.

Fred W. Renshaw, traffic manager of the Buffalo Chamber of Commerce, also objected and C. C. Handy, general attorney of the New York Central, declared that "there is adequate transportation in existence, and twice over for all the movable traffic without adding this burden of a $27,500,000 federal subsidy."

New York Loading Practices Criticised

The Merchants Association of New York, the State Chamber of Commerce, and those of Brooklyn and Queensboro, have addressed a letter to the heads of railroad, steamship and terminal companies serving the Port of New York protesting against the loading practices on railroad and steamship piers, "which are such that receivers of freight are required to employ labor they do not need; to pay for services of loaders that are not wanted, or, when loading assistance is desired, to pay whatever the loaders demand—charges which are frequently exorbitant."

One railroad and one steamship company, it is stated, were not addressed, since, it was stated, they "have shown that they can control the situation and do the loading with their own help at a charge which is less than the present extortionate charges which public loaders demand, when receivers wish this service, and by permitting merchants to do their own loading if they so elect. The same thing can be done by all lines."

"This is not," the letter continues, "to be construed as a request to eliminate loadings. Such services are required by some merchants. What we do demand is that loading be controlled by those who control the freight terminals and on piers; that this service be not forced upon those who do not want it; that no independent agency be allowed the exclusive right to intervene between your company and your patrons."

Motor Bus Lines Protest Rail Passenger Rate Cuts

The National Association of Motor Bus Operators has filed with the National Recovery Administration a formal request for the aid of that agency in an effort which the motor bus lines of the country are making to have the Interstate Commerce Commission suspend a proposed low-rate passenger tariff to be put into effect by the Southern Railway System on August 1, applying between many points on the Southern system a rate of 1½ cents per passenger mile. Referring to its request to the commission for the suspension of the proposed rates the Bus Association's communication to the N. R. A. said in part:

"While it is realized that the railroads are not subject to control under the national industrial recovery act, it is hoped that the National Recovery Administration, as a party in interest as far as the motor bus industry is concerned, can join with this association in a protest to the Interstate Commerce Commission against railroads filing rates in competitive territory which are not of a compensatory nature. As set out in the enclosed complaint, it is the belief of this association and of the Atlantic Greyhound Lines that the Southern Railway System cannot possibly justify this rate, even on the ground that it is experimental, as being in anywise compensatory.

"If the proposed tariff cannot be shown to be compensatory it should not be put into effect, for it will mean that bus lines in the Southern territory will have to operate on the same non-compensatory basis at a time when this association is trying to cooperate with the President in developing a code of fair competition for the motor bus industry. It would seem under the circumstances for the motor bus industry to file a code of fair competition according to the terms of the national industrial recovery act and thereby considerably increase its costs of operation would probably result in the bus operators being ruined if they were subjected to railroad competition on a non-compensatory, cut-rate basis. This would seem to be contrary to the spirit of the law and contrary to the hopes of the Administration that competition, both within and between industries, should be according to fair standards."

Roads Earn 59½ Millions in June

Class I railroads of the United States for the first six months of 1933 had a net railway operating income of $152,903,213, which was at the annual rate of return of 1.40 per cent on their property investment, according to reports filed by the carriers with the Bureau of Railway Economics. In the first six months of 1932, their net railway operating income was $109,612,839 or one per cent on their property investment.

Gross operating revenues for the first six months of 1933 totaled $1,415,222,961 compared with $1,583,370,738 for the same period in 1932, a decrease of 10.6 per cent. Operating expenses for the first six months of 1933 amounted to $1,068,940,604 compared with $1,266,884,648 for the same period in 1932, a decrease of 15.6 per cent.

Class I railroads in the first six months of 1933 paid $133,629,360 in taxes compared with $146,136,551 for the same period in 1932, a decrease of 8.6 per cent.

Fifty-two class I railroads failed to earn expenses and taxes in the first six months of 1933, of which 11 were in the Eastern, 9 in the Southern and 32 in the Western District.

Class I railroads for the month of June alone had a net railway operating income of $59,453,185 which, for that month, was at the anual rate of return of 2.81 per cent on their property investment.. In June, 1932, their net railway operating income was $12,299,666 or .58 per cent.

Gross operating revenues for the month of June amounted to $278,311,079 compared with $243,545,252 in June 1932, an increase of 14.3 per cent. Operating expenses in June totaled $185,324,570 compared with $197,295,766 in the same month in 1932, a decrease of 6.1 per cent.

Law Committee Meets

The Law Committee of the Association of Railway Executives met in Atlantic City on July 27 with counsel from most of the larger railroads in attendance. Proposed legislation dealing with the railways was discussed at length with the committee standing ready to co-operate to the fullest extent with the Federal Co-ordinator of Transportation and the Administration's special committee on transportation legislation in their study of legislative needs for improving transportation conditions. Judge R. V. Fletcher, general counsel of the Association of Railway Executives, presided at the Atlantic City meeting.

Canadian Roads Improve Net in June

The Canadian National reports June net revenues of $985,896, an increase of $249,981 over June of last year. Gross revenues were reduced by $271,688 to $13,526,022, but expenses were lower by $521,669 to $12,540,126, leaving net at $985,896, as compared with $735,914 in June of 1932.

For the first half of the present year, gross revenues on the Canadian National amounted to $67,474,871, a decline of $12,697,617 from the 1932 figure. Operating expenses were reduced in that period by $9,098,266, as compared with 1932, expenses in the first six months of 1933 totalling $70,453,852 as compared with $79,552,119 in the same period of 1932.

The System has a net revenue deficit for the first half of 1933 of $2,978,981 as against net revenue in the same period of 1932 of $620,369.

The Canadian Pacific had net revenues of $2,049,387 in June, an increase of $470,770 over the $1,578,616 reported for June of last year. Gross revenues at $10,439,631 were only $57,170 less than in June, 1932, and operating expenses were reduced by $527,941 to $8,390,244, compared with $8,918,185 a year ago.

For the six months ended June, gross revenues were lower by $7,321,804, totaling $50,723,494, but expenses were reduced by $6,931,066 to $45,862,354, leaving net for the period of $4,861,140, or a decline of only $390,738 from the $5,251,879 reported a year ago.

Reduced Anthracite Rates Effective August 11

Contemplated reductions in all-rail rates on anthracite coal from Pennsylvania fields to New England, Long Island and Westchester County, New York, are expected to become effective on August 11, according to a statement issued on July 26 by D. T. Lawrence, chairman of the Trunk Line Association. At the same time Mr. Lawrence said that any criticism of the Interstate Commerce Commission in connection with the delay in making these rates effective is unwarranted.

Commenting on this latter point the statement said:

"We further wish to say that there appears to have been some disposition to criticise the Interstate Commerce Commission for its declination of the original request of the initial anthracite carriers that they be permitted to publish these rates on less than statutory notice to the public as mentioned in press notice released by us on July 18. No such criticism of the Commission is warranted and we regret that the wording of our notice created such an impression.

"The original petition was denied by the Interstate Commerce Commission merely as a matter of record at the suggestion of the applicant carriers, the original petition having been lacking in some respects, and it being the intention of the rail carriers, as announced in our previous press dispatch, to immediately file another and more comprehensive petition.

"The Interstate Commerce Commission has given the carriers courteous, prompt and satisfactory consideration in the whole matter."

The commission has issued a fourth-section order authorizing the roads to put into effect, without making corresponding reductions at intermediate points, the proposed reductions, to continue until the effective date of the further order or orders, to be issued pursuant to a hearing on the application.

Great Northern and Northern Pacific Make Two-Cent Fares Permanent

The Great Northern and the Northern Pacific on August 1 permanently reduced the coach and tourist sleeping car passenger rate to two cents a mile throughout the systems. The rail fare for Pullman sleeping cars and parlor cars remains as at present, but coach passengers desiring to ride in Pullman sleeping cars or parlor cars over night or between any points can do so upon paying the difference of 1.6 cents a mile plus the usual Pullman fare. Through fares to and from points beyond these railroads are based upon the combination of the fares in effect on the railroads involved. Intermediate rates via Omaha were equalized with the rates via of St. Paul as the basis.

Following the action taken by these railroads, the Chicago, Milwaukee, St. Paul & Pacific established the two-cent rate on its main line west of St. Paul, Minn., on all branch lines west of Aberdeen, S. D., and on restricted branch lines east of Aberdeen, while the Chicago & North Western and the Union Pacific placed the two-cent rate in effect at competitive points.

Eastern Car Foreman's Association Outing

Over 200 railroad and supply men from the New York and New England districts attended the outing of the Eastern Car Foreman's Association which was held on July 20 at the Racebrook Country Club, New Haven, Conn. Golf, quoits and bridge were the principal events. The winners of the golf tournament were: Low gross (no class)—E. D. Searle, American Arch Company, Inc., and W. R. Gellatly, Pittsburgh. Low gross (Class A)—J. J. Pelley, president, New York, New Haven & Hartford, and C. Jarden, Sherwin-Williams Company. Low net—C. F. Monroe, New York; E. M. Harshbarger, SKF Industries, Inc., and W. C. Clingan, SKF Industries, Inc. Low gross (Class B)—C. E. Bryant, Jr., Johns-Manville Company, and H. M. Dewart, Central Vermont. Low net—B. Brown, Superheater Company, and N. T. McKee, Superheater Company. Low gross (Class C)—G. J. Martin, Equipment Specialties Company, and E. B. Perry, New York, New Haven & Hartford. Low net—W. C. Smith, New York, New Haven & Hartford, and G. W. Hayden, Magnus Company.

The kickers' handicap was won by C. P. Greene, Galena Oil Company, and F. W. Gregory, Magnus Company. In the golfers' putting contest A. W. Fuller, American Brake Shoe Company, and W. K. Krepps, Crucible Steel Company, were the winners. F. J. Wall, vice-president, New York, New Haven & Hartford, and H. F. Coston, Central of New Jersey, were the winners in the non-golfers' putting contest. The prizes for quoits were won by G. W. Ditmore, Delaware & Hudson; T. P. O'Brian, O. M. Edwards Company, and John Schlintz, Sherwin-Williams Company. The bridge prizes were received by H. N. Ransom, Waugh Gould Company; R. R. Paradies, Beckwith-Chandler Company; B. P. Flory, New York, Ontario & Western, and R. Jenkins, Nathan Manufacturing Company.

Silver Bay Conference on Industrial Relations

The Sixteenth Annual Conference on Industrial Relations will be held at Silver Bay on Lake George, N. Y., August 23-26. The first session at 2:30 p. m., Wednesday, August 23, will be featured by an address on Industrial Relations in the Light of Present Social and Economic Trends, by Seth W. Candee, Tidewater Oil Company. Naturally various aspects of the Industrial Recovery Act will be considered during the conference. A series of sectional round-tables will be held on Thursday morning, August 24, H. A. Enochs, chief of personnel of the Pennsylvania Railroad, conducting the one on transportation problems. On that evening Prof. Hudson B. Hastings, of Yale University, will discuss the economic effects of the machine on human welfare; the social effects will be discussed by John Carmody, president of the National Society of Industrial Engineers. On Friday morning, August 25, the discussion will revolve around a practical program for employee security. On that evening, President Henry I. Harriman of the Chamber of Commerce of the United States, will give an address on the Economic Background of the Administration's program for Industrial Recovery. The closing session on Saturday morning, August 26, will consider the attitude of labor toward the Recovery Act. Information about the conference may be secured from E. C. Worman, 347 Madison Avenue, New York City.

R. A. O. A. to Meet in Chicago

The Forty-fifth annual meeting of the Railway Accounting Officers' Association will be held on August 30 and 31, at the Stevens Hotel, Chicago. The "open house" committee meetings of the principal committees will be held on Tuesday, August 29.

Canadian Commissioner Dies

F. A. Labelle, deputy chief of the Board of Railway Commissioners of Canada, died last week at Blue Sea Lake in the Gatineau Hills. Mr. Labelle was educated at Rigaud College, St. Marie College in Montreal and Laval University. He began practice as a notary in 1895 at Hull, P. Q., and was appointed deputy chief of the Board of Railway Commissioners last year.

Emergency Board Appointed

President Roosevelt has appointed an emergency board under the provisions of the railway labor act to investigate a dispute between the Louisiana, Arkansas & Texas and its train and engine employees. The board consists of Dr. L. W. Courtney, of Waco, Tex., Frank P. Douglas, of Oklahoma City, Okla., and W. H. Hamilton, of New Haven, Conn.

Wabash Receivers To Consider Question of Disbursements to W. H. Williams

W. S. Franklin, receiver of the Wabash, has replied to the Interstate Commerce Commission's inquiry as to what, if anything, was being done or contemplated by the receivers toward recovering any part of the "extraordinary disbursements" for salaries and for special services to the late W. H. Williams in 1930 and 1931. The letter said that while no steps of the nature mentioned had been taken or contemplated the receivers will take the inquiry into account and arrange to advise the commission "should full consideration of all phases of the matter seem to call for action on our part."

Germany to Have World's Fastest Train

The German Reichsbahn's "Flying Hamburger," the diesel-operated unit which negotiates the 178.1 miles between Berlin and Hamburg at 77.4 m. p. h., holds the world's record for railway speed, but for steam trains the Great Western of England's "Cheltenham Flyer" still has the supremacy with its 71.3 m. p. h. between Swindon and London. Now, however, the Railway Gazette (London) reports, the Reichsbahn management has arranged a schedule in steam service between Berlin and Hamburg to be applied when the "Flying Hamburger" is out of service calling for an average speed of 72.2 m. p. h. for the 178.1-mile journey.

Railways Ask Consideration in Connection With Steel Code

In connection with the consideration by the National Recovery Administration of the code of fair competition submitted by the iron and steel companies, R. V. Fletcher, general counsel of the Association of Railway Executives, has filed with the administration a memorandum calling attention to the possible effect on the railways if steel prices are to be increased as a result of the adoption of the code, particularly as they are not in a position to increase their own prices to compensate themselves for such an increase in their expenses.

"The employment program of the President of the United States," the memorandum says, "obviously contemplates that where an industry has its cost of production increased by reduction in hours of labor or increases in rates of pay, in accordance with the program, it shall be permitted to increase its prices to consumers in order to recoup its loss. The railroads are not finding fault with such an understanding, which is obviously equitable.

"At the same time, the railroads call attention to the fact that, if they are required to pay more for steel by reason of agreements and codes brought about by the operation of the act, they will not be in a position to increase their prices to compensate for the increase in the amount of their expenses. The railroads are public service companies and their rates are regulated by public authority. It follows therefore, that the railroads are in a different position from that sustained by ordinary industry, in that they may not increase their charges except as a result of application to public authority. Such application ordinarily leads to hearings, which are often protracted, and sometimes result in findings that the increased rates are not justified.

"Our purpose in filing this memorandum is to call attention to the peculiar situation of the railroads and to urge the view, in any action taken with reference to the code in question, that due and careful consideration should be given to the fact that the railroads buy practically one-fifth of all the steel produced in the country and that they are not at liberty, without approval of public authority, to increase their rates and charges so as to compensate for any increased expenses which may grow out of the adoption of the code."

14,000,000 Man-Hours Without a Reportable Accident

A total of 1,563 employees in 13 shops of the motive power and car departments of the Chicago & North Western have worked 14,259,750 man-hours without a reportable accident. Leading the groups in length of non-accident days is the Milwaukee passenger car department with 2,460 days, or 82 months without an accident. The Milwaukee freight car department is second with 2,160 days, or 72 months. In the motive power department, the North Fond du Lac (Wis.) shop worked 1,680 days, or 56 months, while the Winona (Minn.) shop worked 1,590 days, or 53 months without a reportable accident.

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Co-ordinating Committees Meet

The three regional co-ordinating committees of railroad executives, appointed to co-operate with the Federal Co-ordinator of Transportation under the terms of the Emergency Transportation Act of 1933 met in New York on July 2 to discuss projects falling within their jurisdiction. No announcement, however, was made of any final decisions reached at the conferences.

Labor Executives Meeting

The Railway Labor Executives Association met in Cleveland on August 3 to discuss various questions affecting railway organized labor under the Emergency Transportation Act. Several of the leaders interviewed on the eve of the meeting expressed themselves as dissatisfied at the rate at which furloughed employees are being reinstated, the implication being that "the railroads are not going along with the President's recovery program."

New Equipment Installed

Class I railroads in the first six months of 1933 placed in service 1,251 new freight cars, according to the Car Service Division of the American Railway Association. In the same period last year the total was 1,927. On July 1 this year they had 1,205 new freight cars on order, compared with 1,951 on the same day last year.

Locomotives placed in service in the first six months aggregate 1 this year and 34 last year. New locomotives on order on July 1 this year totaled 1, compared with 6 on the same day last year.

Pacific Club Meets August 10

The Pacific Railway Club will hold its next meeting at the Transportation Club, Palace Hotel, San Francisco, Cal., on the evening of August 10. The subject to be discussed is the transportation of live stock, and the principal speakers are to be W. T. Trellaven, general live stock agent of the Atchison Topeka & Santa Fe; L. R. Smith, assistant superintendent of the Southern Pacific at Stockton, Cal.; John Curry, traffic manager of the Western Cattle Marketing Association, and W. P. Wing, manager of the California Wool Growers' Association.

Recapture Money Being Refunded

The Secretary of the Treasury has refunded $12,420,270 to railroads that had made payments to the Interstate Commerce Commission's general railroad contingent fund under the provisions of the recapture law, which was recently repealed, including interest accumulated and the profit realized by the government from the sale of the government bonds in which the recapture money was invested. Settlements are yet to be made with approximately 25 roads. Of the twelve millions now reported, $7,774,804 went to the Duluth, Missabe & Northern.

Upper Mississippi River Improvement Work to Be Authorized

The Cabinet Board for Public Works is expected at its next meeting to authorize the resumption of work on the project for a nine-foot channel for the upper Mississippi river with a view to completing the work in two or three years. The exact amount to be authorized has not yet been determined, but funds will be allocated sufficient to cover all the work that can be done in the next year. Additional reports are still to be received from the engineers on the project for further improvement work on the Missouri river.

Long Island to Continue Reduced Fares

The low-cost round trip tickets and the new types of commutation tickets which the Long Island made available May 1 for an experimental period of three months ending July 31 will remain on sale throughout the remainder of the year, according to an announcement from George Le Boutillier, vice-president of the Long Island.

"Since the new tickets were introduced less than three months ago," said Mr. Le Boutillier, "there has been an appreciable increase in patronage of Long Island passenger trains. While more riders have been handled, there has not been a proportionate increase in revenues. However, the management is pleased with the substantial increase in traffic and feels justified in extending the effective date of the experiment."

West Side Improvement New York

The "West Side Improvement" of the New York Central in New York City, which has been under construction for the last seven years is now so far completed that on August 1, the company ran its first revenue freight train over the new double-track elevated structure from Thirty-fifth street and Eleventh avenue southward to Twentieth street, about 1¼ miles. The event was marked by a brief informal celebration. Thus is completed the first stage of a change which will do away with what the people of New York have for 50 years called a nuisance—the operation of freight trains on the surface of city streets. The whole improvement south from the railroad yards at 35th street to Spring street, about three miles, is planned for completion early in 1934.

Canadian Clerks Fight Pay Reduction

The Canadian Pacific has forwarded to the Minister of Labor at Ottawa a request for the appointment of a board of conciliation to negotiate the wage dispute between the Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees and the company. The railway seeks a second ten per cent reduction in basic rates of pay and the union leaders have refused to accept the terms of the company's demands.

George S. Currie, of the firm of McDonald & Currie, chartered accountants, has been named in the company's letter to the Minister as their representative on the board. The union has not yet made its appointment, and the chairmen of the board will be named by the Minister of Labor.

Some 4,000 employees are concerned in the negotiations.

The Canadian Brotherhood of Railway Employees, representing clerks and some other crafts on the Canadian National, are meanwhile awaiting the result of a referendum of their members throughout the country before taking action. This union comprises some 12,000 employees.

C. T. Cramp Dies

C. T. Cramp, general secretary of the National Union of Railwaymen (Great Britain) and outstanding among railway labor leaders in a country which has produced many who have risen to fame, died in London on July 14 at the age of 57. Mr. Cramp entered railway service as a station porter at the age of 21, later becoming a passenger trainman. Active from the first in labor affairs, he played a prominent part in the union amalgamation which in 1913 gave rise to the National Union of Railwaymen. In 1918-19 he was president of the organization and in 1920 became its industrial general secretary, J. H. Thomas of political fame being its political general secretary. When Mr. Thomas resigned this position two years ago, Mr. Camp took over the duties of that post as well.

Air Lines Carry Less Passengers in First Six Months of 1933

Scheduled air lines operating in continental United States carried 195,874 passengers during the first six months of 1933, it is announced by the Aeronautics Branch of the Department of Commerce. A comparison of the months of June in the two years shows an increase from 46,639 passengers carried in June, 1932, to 54,023 in June, 1933. But for the entire six months the total showed a decrease under January-June, 1932, when 217,588 passengers were carried. With respect to express carried, miles flown and passenger-miles flown, the record shows increases.

Information on foreign extensions of air lines is still in course of compilation. The domestic lines flew 22,904,511 miles, carried 650,875 pounds of express and flew 64,382,359 passenger miles during the first six months of 1933.

Bituminous Coal Producers File Code and Increase Wages

The Northern Coal Control Association, representing producers of bituminous coal in Pennsylvania, Ohio, and northern West Virginia; and the Smokeless and Appalachian Coal Association, representing producers in southern West Virginia, Virginia, eastern Kentucky, and Tennessee, on July 28 submitted for the approval of the National Recovery Administration a code of fair competition and at the same time announced general increases in wages for their employees, to become effective on July 29 and August 1, estimated at $60,000,000 a year. The two associations were each formed for the purpose of preparing and submitting a code and were able to agree on general provisions and wage rates providing for a differential in the southern fields below the rates paid in the northern fields somewhat less than the previous differentials. Representatives of the operators said that the effect undoubtedly would be to increase the price of coal and decrease its consumption in competition with oil, gas, and electricity, but that any fur-

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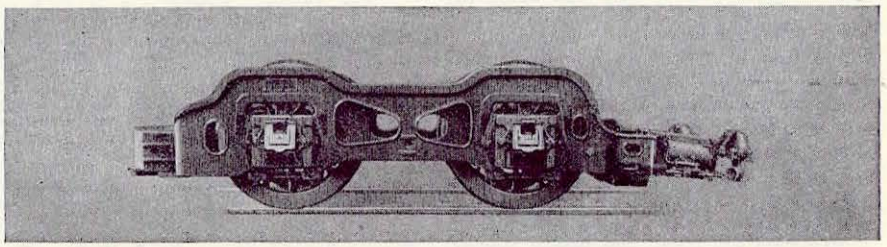

FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK CHICAGO MONTREAL

ther advance in wages would send still more consumers of coal to competing fuels, cause greater unemployment in the mining fields and hamper rather than assist the President's recovery program.

Meetings & Conventions

The following list gives names of secretaries, date of next or regular meetings and places of meetings.

AIR BRAKE ASSOCIATION.—T. L. Burton, Room 2205, 150 Broadway, New York City.

ALLIED RAILWAY SUPPLY ASSOCIATION.—F. W. Venton, Crane Company, 836 S. Michigan Ave., Chicago. To meet with Air Brake Association, Car Department Officers' Association, International Railroad Master Blacksmiths' Association, International Railway Fuel Association, International Railway General Foremen's Association, Master Boiler Makers' Association and the Traveling Engineers' Association.

AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—W. R. Curtis, F. T. R., M. & O. R. R., Chicago, Ill.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. L. Duncan, 332 S. Michigan Ave., Chicago.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—F. O. Whiteman, Union Station, St. Louis, Mo.

AMERICAN ASSOCIATION OF RAILWAY ADVERTISING AGENTS.—E. A. Abbott, Poole Bros., Inc., 85 W. Harrison St., Chicago. Next meeting, January 20, 1934.

AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.—F. R. Borger, C. I. & L. Ry., 836 Federal St., Chicago. Annual meeting, October, 1933, Chicago, Ill.

AMERICAN ELECTRIC RAILWAY ASSOCIATION.—(See American Transit Association.).

AMERICAN RAILWAY ASSOCIATION.—H. J. Forster, 30 Vesey St., New York, N. Y.
- Division I.—Operating.—J. C. Caviston, 30 Vesey St., New York.
  - Freight Station Section.—R. O. Wells, Freight Agent, Illinois Central Railroad, Chicago.
  - Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York.
  - Protective Section.—J. C. Caviston, 30 Vesey St., New York.
  - Safety Section.—J. C. Caviston, 30 Vesey St., New York. Annual meeting, October 3-5, 1933, Hotel Stevens, Chicago, Ill.
  - Telegraph and Telephone Section.—W. A. Fairbanks, 30 Vesey St., New York.
- Division II.—Transportation.—G. W. Covert, 59 East Van Buren St., Chicago.
- Division III.—Traffic.—J. Gottschalk, 143 Liberty St., New York.
- Division IV.—Engineering.—E. H. Fritch, 59 East Van Buren St., Chicago. Annual meeting, March 13-15, 1934, Chicago, Ill. Exhibit by National Railway Appliances Association.
  - Construction and Maintenance Section.—E. H. Fritch, 59 East Van Buren St., Chicago.
  - Electrical Section.—E. H. Fritch, 59 East Van Buren St., Chicago.
  - Signal Section.—R. H. C. Balliet, 30 Vesey St., New York.
- Division V.—Mechanical.—V. R. Hawthorne, 59 East Van Buren St., Chicago.
  - Equipment Painting Section. — V. R. Hawthorne, 59 East Van Buren St., Chicago.
- Division VI.—Purchases and Stores.—W. J. Farrell, 30 Vesey St., New York.
- Division VII.—Freight Claims.—Lewis Pilcher, 59 East Van Buren St., Chicago.
- Division VIII.—Motor Transport.—George M. Campbell, 30 Vesey St., New York.
- Car Service Division.—C. A. Buch, 17th and H Sts., N. W., Washington, D. C.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W. Ry. 319 N. Waller Ave., Chicago.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—J. A. Senter, Ind., Agt., N. C. & St. L. Ry., Nashville, Tenn. Semi-annual Meeting, December 7-8, 1933, Sherman Hotel, Chicago, Ill.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in co-operation with the American Railway Association. Division IV.—E. H. Fritch, 59 East Van Buren St., Chicago, Ill. Annual meeting, March 13-15, 1934, Chicago, Ill. Exhibit by National Railway Appliances Association.

AMERICAN RAILWAY MAGAZINE EDITOR'S ASSOCIATION.—Miss E. Kramer, M-K-T Employees Magazine, St. Louis, Mo.

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—G. G. Macina, C., M., St. P. & P. R. R., 11402 Calumet Ave., Chicago. Exhibit by Tool Foremen Suppliers' Association.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—R. E. Schindler, Union Trust Bldg., Washington, D. C.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Calvin W. Rice, 29 W. 39th St., New York. Railroad Division. Marion B. Richardson, Ahrens & Richardson, 30 Church St., New York.

AMERICAN TRANSIT ASSOCIATION.—Guy C. Hecker, 292 Madison Ave., New York. Annual meeting, September 18-20, 1933, Hotel Stevens, Chicago, Ill.

AMERICAN WOOD PRESERVERS' ASSOCIATION.—H. L. Dawson, 1104 Chandler Building, Washington, D. C. Annual meeting, January 24-26, 1934, Houston, Tex.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—H. D. Morris, District Claim Agent, Northern Pacific Ry., St. Paul, Minn. Annual Meeting, 1934, Cleveland, Ohio.

ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W., Room 411, C. & N. W. Station, Chicago. Exhibit by Railway Electrical Supply Manufacturers' Association.

ASSOCIATION OF RAILWAY EXECUTIVES.—Stanley J. Strong, Transportation Building, Washington, D. C.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—S. A. Baber, High Grade Manufacturing Co., 10418 St. Clair Ave., Cleveland, Ohio. Meets with American Railway Bridge and Building Association.

CANADIAN RAILWAY CLUB.—C. R. Crook, 2276 Wilson Ave., N. D. G., Montreal, Que. Regular meetings, second Monday of each month, except June, July, and August, Windsor Hotel, Montreal, Que.

CAR DEPARTMENT OFFICERS' ASSOCIATION.—A. S. Sternberg, M. C. B. Belt Ry. of Chicago, 7926 South Morgan Street, Chicago.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—G. K. Oliver, 2514 W. 55th St., Chicago. Regular meetings, second Monday of each month, except June, July and August, Auditorium Hotel, Chicago.

CAR FOREMEN'S ASSOCIATION OF LOS ANGELES.—J. W. Krause, Room 299, 610 So. Main St., Los Angeles, Cal. Club not active at present time.

CAR FOREMEN'S ASSOCIATION OF ST. LOUIS, MO.—J. F. Brady, Main and Barton Sts., St. Louis, Mo. Operation suspended indefinitely.

CENTRAL RAILWAY CLUB OF BUFFALO.—M. D. Reed, 1817 Hotel Statler, McKinley Square, Buffalo, N. Y. Regular meetings, second Thursday of each month, except June, July and August, Hotel Statler, Buffalo, N. Y.

CINCINNATI RAILWAY CLUB.—D. R. Boyd, 2920 Utopia Place, Hyde Park, Cincinnati, Ohio. Operation suspended indefinitely.

CLEVELAND RAILWAY CLUB.—F. L. Frericks, 14416 Alder Ave., Cleveland, Ohio. Regular meetings second Monday of each month, except June, July and August, Hotel Cleveland, Cleveland, Ohio.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich.

INTERNATIONAL RAILWAY FUEL ASSOCIATION.—T. D. Smith, 1660 Old Colony Building, Chicago, Ill.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 1061 W. Wabasha St., Winona, Minn.

MASTER BOILER MAKERS' ASSOCIATION.—A. F. Stiglmeier, 29 Parkwood St., Albany, N. Y.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—James B. Walker, 270 Madison Ave., New York. Annual meeting, October 10-13, 1933, Hotel Gibson, Cincinnati, Ohio.

NATIONAL ASSOCIATION OF RAILROAD TIE PRODUCERS.—(See Railway Tie Association.).

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. W. Kelly, Suite 322, 910 South Michigan Ave., Chicago. Exhibit at A. R. E. A. convention.

NATIONAL SAFETY COUNCIL.—Steam Railroad Section (See Safety Section, American Railway Association).

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, second Tuesday of each month, except June, July, August and September, Hotel Statler, Boston, Mass.

NEW YORK RAILROAD CLUB.—D. W. Pye, 30 Church St., New York. Regular meetings third Friday of each month, except June, July and August, 29 W. 39th St., New York City.

PACIFIC RAILWAY CLUB.—W. S. Wollner, P. O. Box 3275, San Francisco, Cal. Regular meetings second Thursday of each month, alternately in San Francisco and Oakland.

RAILWAY ACCOUNTING OFFICERS' ASSOCIATION.—E. R. Woodson, Transportation Building, Washington, D. C. Annual Meeting, August 30-31, 1933, Hotel Stevens, Chicago, Ill.

RAILWAY BUSINESS ASSOCIATION.—P. H. Middleton, (Treas. and Asst. Sec.). First National Bank Building, Chicago, Ill. Annual meeting, November, 1933, Hotel Stevens, Chicago, Ill.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 1841 Oliver Building, Pittsburgh, Pa. Regular meetings, fourth Thursday of each month except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS ASSOCIATION.—Edward Wray, 9 S. Clinton St., Chicago. Meets with Association of Railway Electrical Engineers.

RAILWAY FIRE PROTECTION ASSOCIATION.—R. R. Hackett, Baltimore & Ohio R. R., Baltimore, Md. Annual meeting, October 17-18, 1933, Hotel Stevens, Chicago, Ill.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1841 Oliver Bldg., Pittsburgh, Pa. Meets with Mechanical Division Purchases and Stores Division and Motor Transport Division, American Railway Association.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York. Meets with Telegraph and Telephone Section of A. R. A. Division I.

RAILWAY TIE ASSOCIATION.—Roy M. Edmonds, 1252 Syndicate Trust Bldg., St. Louis, Mo.

RAILWAY TREASURY OFFICERS ASSOCIATION.—L. W. Cox, 1428 Broad Street Station Building, Philadelphia, Pa. Annual meeting, October 6-7, 1933, Palmer House, Chicago, Ill.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—T. F. Donahoe, Gen. Supvr. Road, Baltimore & Ohio, Pittsburgh, Pa. Annual meeting, September 19-21, 1933, Hotel Stevens, Chicago, Ill.

ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal. Drawer 24, M. P. O., St. Louis, Mo. Meetings temporarily suspended.

SIGNAL APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York. Meets with A. R. A. Signal Section.

SOCIETY OF OFFICERS, EASTERN ASSOCIATIONS OF RAILROAD VETERANS.—M. W. Jones, Baltimore & Ohio, Mt. Royal Station, Baltimore, Md. Annual meeting, October 7-8, 1933, Scranton, Pa.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, 4 Hunter St., S. E., Atlanta, Ga. Regular meetings, third Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta, Ga.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—R. G. Parks, A. B. & C. R. R., Atlanta, Ga.

SUPPLY MEN'S ASSOCIATION.—E. H. Hancock, Treasurer, Louisville Varnish Co., Louisville, Ky. Meets with A. R. A. Division V. Equipment Painting Section.

TOOL FOREMEN SUPPLIERS' ASSOCIATION.—E. E. Caswell, Union Twist Drill Co., 11 S. Clinton St., Chicago, Ill. Meets with American Railway Tool Foremen's Association.

TORONTO RAILWAY CLUB.—N. A. Walford, P. O. Box 8, Terminal "A," Toronto. Regular meetings first Friday of each month, except June, July and August, Royal York Hotel, Toronto, Ont.

TRACK SUPPLY ASSOCIATION.—L. C. Ryan, Oxweld Railroad Service Co., Carbon & Carbide Building, Chicago. Meets with Roadmasters and Maintenance of Way Association.

TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, 1177 East 98th St., Cleveland, O.

WESTERN RAILWAY CLUB.—C. L. Emerson, C. M. St. P. & P., Chicago, Ill. Regular meetings third Monday of each month, except June, July, August and September, Hotel Sherman, Chicago, Ill.

Equipment and Supplies

FREIGHT CARS

THE WABASH is inquiring for 1,500 tons of miscellaneous steel for cars which will be repaired at its Decatur (Ill.) shops.

THE GENERAL CHEMICAL COMPANY has ordered 100 tank cars of 50 tons' capacity from the American Car & Foundry Company.

THE MONTOUR has given a contract to the Standard Steel Car Corporation, to make repairs to 100 steel hopper cars of 70 tons' capacity.

THE YOUNGSTOWN & NORTHERN has given a contract to the Greenville Steel Car

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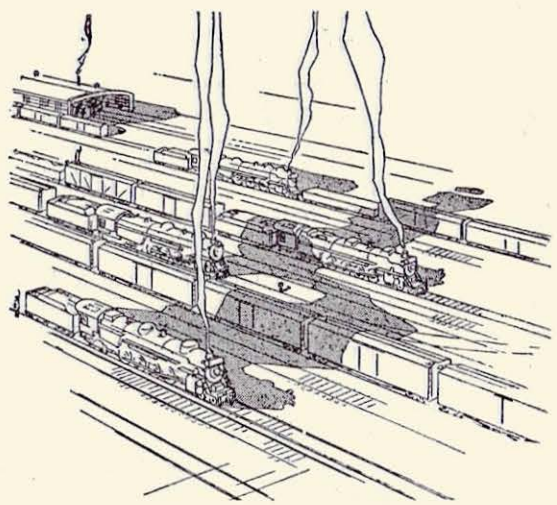
The Locomotive Is *Not* Just A Bunch Of Steel

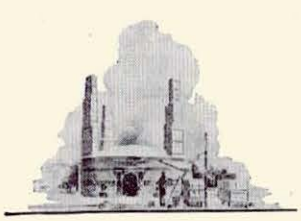


The locomotive is more than just a collection of some thousands of pounds of steel.

It is a highly developed mechanism upon which has been expended the finest brains of the engineering profession.

The Locomotive Arch, too, is more than just a pile of brick and a few tubes. Its present high state of development is the result of years of concentration by engineers of American Arch Company.

Their efforts brought it from the crude stud-supported slabs to the sectionalized tube or syphon-supported Arch you know today. Its development is constantly pursued by American Arch Company who thus contribute an important service to the railroads of the country.



There's More To
SECURITY ARCHES
Than Just Brick

HARBISON-WALKER REFRACTORIES CO.
Refractory Specialists

AMERICAN ARCH CO.
INCORPORATED
Locomotive Combustion Specialists » » »

Company to make repairs to 20 gondola cars of 70 tons' capacity.

MACHINERY AND TOOLS

THE DELAWARE, LACKAWANNA & WESTERN has ordered a 42-in. Niles coach wheel lathe.

IRON AND STEEL

THE DELAWARE, LACKAWANNA & WESTERN has ordered 770 tons of steel for grade crossing work at Cheektowaga, N. Y., from the American Bridge Company, subject to the approval of the New York State Commission.

NEW YORK CENTRAL—A contract for 375 tons of steel for grade crossing elimination work at Corning, N. Y., has been let to the Jones & Laughlin Steel Corporation. This contract was let by William M. Ballard, Syracuse, N. Y., who has the general contract for the work.

MISCELLANEOUS

THE WESTINGHOUSE AIR BRAKE COMPANY will furnish the new AB freight brakes on the 100 tank cars of 50 tons' capacity ordered by the General Chemical Company.

ON THE LEHIGH VALLEY a 30 per cent rise in business is increasing the working schedule of the shops from three days a week to four days a week. For more than a year up to July the shopmen had worked only two days a week.

THE NEW YORK AIR BRAKE COMPANY has received an order to supply the air brake equipment for the new high-speed, stream-lined, three-unit articulated passenger train ordered by the Union Pacific. The equipment will be a combination of pneumatic and electro-pneumatic brakes designed for this train.

THE BALTIMORE & OHIO has restored to full time something over 1,000 of its clerical forces, who, since February 1 last, have been working on less than a full time basis; that is a loss of from two days a month to as much in some instances as half time. This arrangement which was made at a time when business was at a low ebb, was with a view to "spreading the work" and thereby avoiding the more extensive furloughs that would otherwise have been necessary. This "spreading the work" was accomplished with the co-operation of the organization representing the clerical employees.

E. W. SCHEER, vice-president in charge of operation and maintenance of the Reading, has announced that "Effective August 1, additional forces in the maintenance of equipment and maintenance of way departments of the Reading Railway System will be employed and the number of hours of present employees increased equivalent to 1,000 additional employees. These increases are exclusive of train and engine service employees where additional employment will be forthcoming automatically as business improves. The above increases in all probability will be maintained during the balance of the year and should the present trend in general business continue, additional men will be reemployed."

THE NEW YORK CENTRAL has announced a program for August of considerably greater employment in its 16 locomotive, freight car and passenger car shops. These shops are located in several of the eastern and mid-western states. The 6,350 shopmen who were employed in July will be increased to 7,825, a gain of 1,475 and the total days worked in the shops will be increased to 373 as against 271 worked in July. The additional men and days worked will be distributed as follows: Locomotive shops, 694 men, 34 days; freight car shops, 647 men, 56 days and passenger car shops, 134 men, 12 days.

Supply Trade

The ParCar Corporation, 230 Park avenue, New York City, has taken over the **Hennessy Lubricator. Horace Parker** is president; **J. J. Hennessy** and **B. C. Wilkerson** are vice-presidents of The ParCar Corporation.

The Worthington Pump & Machinery Company, Harrison, N. J., has appointed the **Kroeschell Engineering Company,** Chicago, as the authorized dealer for Worthington refrigerator equipment in the Chicago area.

James W. Owens has been appointed director of the **National Weld Testing Bureau,** a new welding division of the **Pittsburgh Testing Laboratory,** Pittsburgh, Pa. The bureau's services cover reports on welding processes, reports on weld specimens, (qualifications of operators), investigation of welded products and structures and investigation of special welding problems. Mr. Owens served as a member of the Emergency Fleet Welding Committee during the World War and was one of the organizers of the American

James W. Owens

Welding Society. For eight years he was welding aide in charge of welding research and development for the Bureau of Construction & Repair, U. S. Navy, at Norfolk, Va. Following this he was for four years director of welding at the Newport News Shipbuilding & Drydock Company. In the latter part of 1930 he, with several other prominent men in the welding field, founded the Welding Engineering & Research Corporation. Mr. Owens is the recipient of the Miller Memorial welding medal for 1929 and is the author of Fundamentals of Welding, Gas, Arc, and Thermit.

Everett E. Adams, vice-president of the Union Pacific System, who has resigned to become vice-president of **Pullman, Inc.,** in charge of a research department that will be especially concerned with the development of transportation equipment, has been in railway service for 28 years. He was born on September 12,

Everett E. Adams

1881, at Watertown, Mass., and graduated from the University of California in 1904. Mr. Adams first entered railway service on August 1, 1905, as a mechanic on the Southern Pacific. Later he was transferred to the engineering department where he was engaged successively as an assistant engineer and as superintendent of the railroad's pipe lines. From 1906 to 1913, Mr. Adams was assistant consulting engineer of the Southern Pacific and the Union Pacific and following the dissolution of the two systems in the latter year he was made consulting engineer of the Union Pacific System at New York. During federal control of the railroads, Mr. Adams served as assistant director of capital expenditures of the United States Railroad Administration, returning to the Union Pacific as consulting engineer on January 1, 1920. On March 1 of that year he was appointed assistant to the president in charge of purchases, engineering and standards, with headquarters at Omaha, Neb. He was appointed also vice-president on September 1, 1929, and on August 11, 1932, his title was changed to vice-president in charge of purchasing, engineering and standards. On January 30, 1933, Mr. Adams was assigned to the position of vice-president in charge of the research and study of ideas for improved passenger equipment, service and methods, and was relieved of his other duties.

Stephen L. Henderson, sales manager of the Railway Appliances division of the **American Fork & Hoe Company,** Cleveland, Ohio, has been appointed manager

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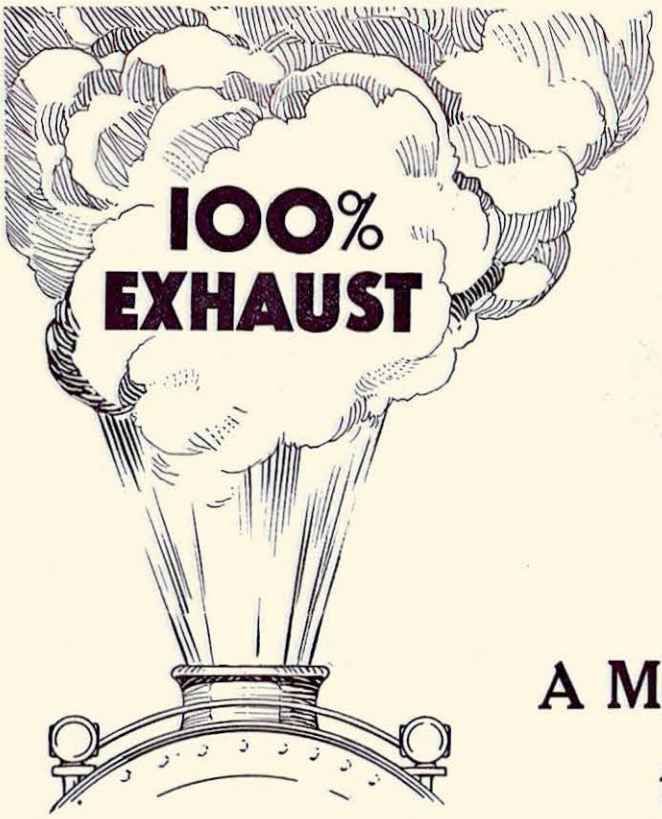

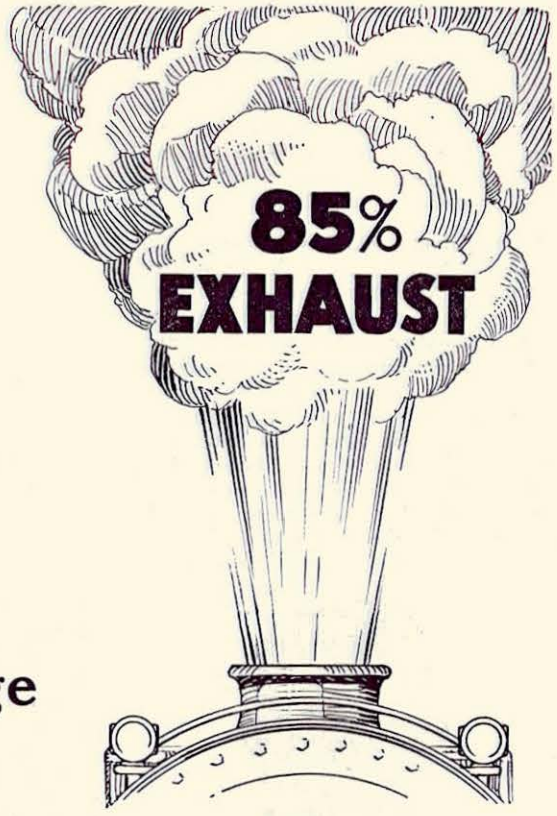

A Message to

Influential Railroad Men

THE ELESCO FEED WATER HEATER

100 per cent exhaust marks an uneconomical locomotive. An exhaust of 85 per cent indicates that an Elesco feed water heater is saving 15 per cent of the fuel formerly burned in the firebox.

This is the reason: The Elesco feed water heater takes 15 per cent of the waste exhaust steam and transfers its heat to the boiler feed water, thereby saving an equivalent amount in fuel. Through this simple process Elesco feed water heaters are saving money on almost 4,000 locomotives.

The cost of application is nominal considering the savings effected. In many cases, operating conditions are such that it is comparatively easy to pay for the equipment out of the savings — without the expenditure of a single dollar by the railroad. It is simply a case of putting on Elesco feed water heaters, which provides work for shop forces, and then letting the heaters pay their own way.

We shall gladly investigate the economy possibilities on your railroad.

THE SUPERHEATER COMPANY

Representative of AMERICAN THROTTLE COMPANY, Inc.

60 East 42nd Street
NEW YORK

ELESCO

Peoples Gas Building
CHICAGO

Canada: The Superheater Company, Limited, Montreal

A-803

Superheaters . Feed Water Heaters . Exhaust Steam Injectors . Superheated Steam Pyrometers . American Throttles

of that division, with headquarters as before at Cleveland. Mr. Henderson was born at Toronto, Can., on June 28, 1889, and has served with various railroads in Canada. These include the Canadian Pacific, the White Pass & Yukon, the Canadian Northern and the Canadian National. He has been sales manager of the Railway Appliances division since 1927.

Lem Adams, chief engineer of the Union Pacific Railroad, with headquarters at Omaha, Neb., has resigned to become chief engineer of the **Oxweld Railroad Service Company,** Chicago. Mr. Adams, whose appointment became effective on August 1, has served in the engineering and maintenance of way departments of the Union Pacific System for more than 23 years. He was born on June 6, 1886, at Buda, Tex., and was educated at the Texas A. & M. College from which he graduated with the degree of bachelor of science in civil engineering. Mr. Adams

Lem Adams

entered railway service in June, 1909, as a rodman on the Oregon Short Line (part of the Union Pacific System), where he was appointed a draftsman a year later. In June, 1911, he was made an estimator and served in this position and as chief draftsman until March, 1916, when he was promoted to assistant division engineer. Mr. Adams was appointed an engineering accountant in the following year and in 1918 he became a contract engineer. After a year in this position he was transferred to the Union Pacific unit of the system with the title of special field engineer in the maintenance of way department, then being advanced to roadway assistant for the system at Omaha in April, 1920. On May 15, 1929, Mr. Adams was further promoted to general supervisor maintenance of way of the system at Omaha, which position he retained until September 16, 1931, when he was appointed engineer maintenance of way of the system. He has been chief engineer of the Union Pacific Railroad since early this year.

Ralph H. Watson, vice-president in charge of operations of the Carnegie Steel Company has been appointed vice-president of the **United States Steel Corporation,** New York, in charge of operations of the manufacturing interests of the corporation. Mr. Watson was graduated from Lawrence Scientific School of Harvard University and was associated with the Carnegie Steel Company since 1902, starting as a metal-

Ralph H. Watson

lurgist's assistant at the Homestead Steel Works and advancing by successive stages to the position of general superintendent of the plant in 1928. Since September 1, 1930, he has also held the position of vice-president in charge of operations of the Carnegie Steel Company.

R. E. Zimmerman, since April, 1932, assistant to the president of the **United States Steel Corporation,** in charge of research and technology, has been appointed vice-president in charge of the above matters, with headquarters at New York. Mr. Zimmerman was graduated from Franklin and Marshall College and the Massachusetts Institute of Technology. Prior to 1932, he was for many years associated with the American Sheet & Tin Plate Company, at Pittsburgh, Pa., starting as a research associate and progressing

R. E. Zimmerman

to the position of director of the research laboratory and later assistant to the vice-president.

OBITUARY

Frank W. Peek, Jr., chief engineer of the Pittsfield, Mass., works of the General Electric Company and one of the company's specialists in high-voltage work, was killed on July 26 when his automobile was struck by a train near Gascones, on the Gaspe peninsula of Canada. Mr. Peek was 49 years of age at the time of his death.

Aaron Dean, special representative at New York of the Union Switch & Signal Company, died on August 1 at his summer home, Seagirt, N. J. He was born at Deans, N. J., on December 26, 1859, and took a four-year engineering course at New Brunswick. He began railway work in 1881 as assistant engineer on the New York & New England (now part of the New York, New Haven & Hartford). From 1882 to 1885, he was engineer in charge of double track improvements on the Naugatuck, (also part of the New York, New Haven & Hartford), and then to 1887, was engineer and draftsman in the road and rolling stock department. Mr. Dean was then appointed assistant signal engineer of the New York, New Haven & Hartford, where he remained until 1892. During the next three years he was with the Johnson Railroad Signal Company. Later he was eastern representative of the National Switch & Signal Company. From 1897 onward he was out of the railroad field, but in 1901 and 1902 was in the signal department of the New York Central & Hudson River (now the New York Central) designing standards. Next he was signal engineer and superintendent of construction of the Pneumatic Signal Company. In 1904, he became eastern agent and superintendent of construction for the General Railway Signal Company, but soon went to the Federal Signal Company, where he was western manager, later being made chief engineer and general manager. From 1911 until March, 1915, he was western manager of the Union Switch & Signal Company, and later became resident manager at New York. Since September, 1916, his position has been that of special representative of the same company at New York.

Construction

Boston & Maine.—This company has given a contract to the Boston Bridge Works, Boston, Mass., for re-building the superstructure of bridge 3.10 (old A6) at Everett, Mass., to cost $18,000 and a contract has been given to the Engineering Service & Construction Company, also of Boston, for the masonry of the bridge to cost $13,000. The work involves the use of approximately 198 tons of steel.

New York Central.—A contract has been given to Babor-Comeaue & Company, Inc., New York, for constructing a new concrete platform with steel canopy in connection with facilities in the yard at Fortieth street, New York. A contract has been given to Edward J. Duffy Company, Inc., New York, for strengthening the structures in connection with the cold storage building on Tenth avenue, New York, and a contract has been given to the Combustion Engineering Corporation, New York, to manufacture and install a boiler

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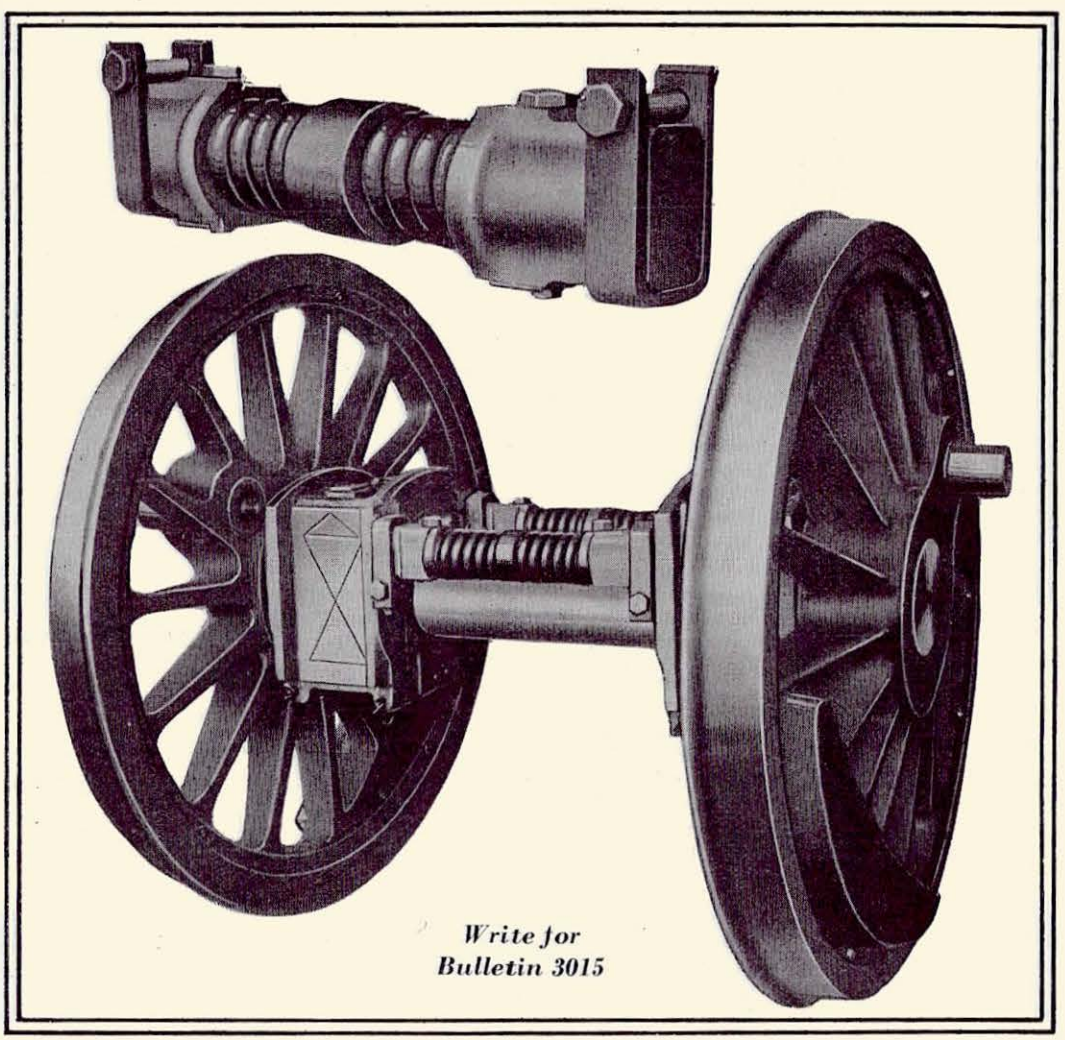
ALCO

LATERAL DRIVING BOX CUSHIONING DEVICE



Write for Bulletin 3015

Softens the grinding pressure between tire flanges and rails, and between wheel hubs and box faces ~ ~ ~ Relieves lateral stresses in locomotive and track without disturbing distribution of weight on journals ~ ~ ~ Improves riding qualities ~ ~ ~ Increases life of tires and rails ~ ~ ~ It is light in weight, inexpensive, and can be applied easily to locomotives in all classes of service.

AMERICAN LOCOMOTIVE CO.

30. CHURCH ST. alco NEW YORK·N·Y·

in the boiler room of the power house at West Albany, N. Y.

ST. LOUIS-SAN FRANCISCO.—This railroad is constructing a 17-stall roundhouse at Oklahoma City, Okla., with company forces.

Financial

BALTIMORE & OHIO.—*Notes.*—This company is asking holders of $5,000,000 of consolidated 5 per cent first mortgage bonds of the Cleveland, Lorain & Wheeling which mature on October 1 to accept in payment 40 per cent in cash and 60 per cent in 5½ per cent three-year secured notes of the B. & O. If holders of sufficient of the bonds assent to the plan promptly the company will make payment and delivery under it on September 1, so that the holders will get their interest and principal in advance of the date when they are due.

BANGOR & AROOSTOOK.—*Abandonment.*—The Interstate Commerce Commission has authorized this company to abandon a portion of its line extending from a connection with the Maine Central at Oldtown, Me., to a point near South Lagrange, 15 miles.

BELLEVUE & CASCADE.—*Acquisition and Operation.*—The Interstate Commerce Commission has authorized this company to acquire and operate a narrow-gage line extending from Bellevue, Iowa, to Cascade, 35.5 miles. The line was owned by the Chicago, Milwaukee, St. Paul & Pacific, which desired to abandon it. This it was permitted to do, under condition that it sell the property at salvage value to anyone willing to operate it, which the new company now undertakes to do.

BOSTON & MAINE.—*Notes.*—The Interstate Commerce Commission has authorized this company to issue $8,930,563 of promissory notes bearing interest and not more than 6 per cent to retire outstanding notes as they come due. The application of the company was for an issue of $16,500,000 of notes for this purpose, but of this amount outstanding $7,569,437 are held by the Reconstruction Finance Corporation and for the reissue of such notes the permission of the C. C. is not required.

CHICAGO GREAT WESTERN.—*Disposes of Interest in K. C. S.*—This company has disposed of 104,500 shares of common stock in the Kansas City Southern which it acquired in 1931 from the Alleghany Corporation.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC. — *Abandonment.* — This company has applied to the Interstate Commerce Commission for authority to abandon its line between Oconto Junction and Oconto, Wis., and to operate under trackage rights over a line of the Chicago & North Western.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—*R. F. C. Loan Application Withdrawn.*—This company has withdrawn its application to the Reconstruction Finance Corporation for a loan of $9,000,000 and it has been dismissed, owing to a marked improvement in the company's earnings and cash position.

CHICAGO, ROCK ISLAND & PACIFIC.—*Acquisition.*—The Interstate Commerce Commission has authorized this company to acquire a 7.3-mile line owned by the Kankakee & Seneca, extending from Seneca, Ill., to Wauponsee.

HILLSBORO & NORTHEASTERN.—*R. F. C. Loan Denied.*—Division 4 of the Interstate Commerce Commission, Commissioners Meyer, Brainerd, and Mahaffie, has denied approval of this company's application for a loan of $15,000 from the Reconstruction Finance Corporation.

MISSOURI PACIFIC. — *Receivership.* — United States District Judge Faris of St. Louis, Mo., has announced the permanent appointment of L. W. Baldwin and Guy A. Thompson as trustees for the Missouri Pacific under the amended Federal Bankruptcy Act. Both men were named trustees on June 22.

MISSOURI PACIFIC.—*Trackage Rights.*—The Interstate Commerce Commission has authorized the St. Louis, Brownsville & Mexico to operate under trackage rights over the Gulf, Colorado & Santa Fe from Algoa, Tex., northwesterly to a connection with the Houston Belt & Terminal at Houston, 24.3 miles.

Abandonment.—The Commission has authorized the St. Louis, Brownsville & Mexico to abandon a portion of its line extending from a point near Seadrift, Tex., to Port O'Connor, 18.5 miles, approximately 2.4 miles of which will be retained as a spur track.

PENNSYLVANIA.—*R. F. C. Loan Repaid.*—This company on July 28 made the final payment of $6,400,000 on its loan from the Reconstruction Finance Corporation made last year, $27,500,000 for electrification work and $1,400,000 as a "work" loan. The entire amount has been repaid since June 1.

PERE MARQUETTE.—*Abandonment.*—The Interstate Commerce Commission has authorized this company to abandon a part of its line extending from a point one mile northeast of Otisville, Mich., to Otter Lake, 3.4 miles.

ROBERVAL-SAGUENAY. — *Abandonment.*—With operating losses totaling $84,132 recorded in connection with that branch line since 1928, this company has been authorized, by an order signed by Adrien Beaudry, chairman of the Quebec Public Service Commission, to discontinue passenger and freight service on its branch line from LaBrosse Junction to the City of Chicoutimi, a distance of 3.1 miles. The company will continue to operate, however, its main line from Arvida to Bagotville, at Baie de Ha! Ha!. The Canadian National Railways will handle passenger and freight traffic into and out of the City of Chicoutimi.

SOUTHERN PACIFIC. — *Abandonment.* — This company and the Arizona & New Mexico have applied to the Interstate Commerce Commission for authority to abandon part of the Lordsburg-Hachita branch, from Hachita, N. M., to Oil Siding, 37.6 miles.

TEXAS & NEW ORLEANS.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon its line from Nome, Tex., to Sour Lake, 8.28 miles.

TONOPAH & TIDEWATER.—*Abandonment of Operation.*—The Interstate Commerce Commission has authorized this company to abandon operation of that part of its lines extending from Ludlow, Calif., to Crucero, 25.7 miles.

WABASH.—*Equipment Trust Certificates.*—Extension of seven issues of equipment trust certificates, some of which have matured, by the receivers of the Wabash has been successfully negotiated, according to an announcement made yesterday by A. K. Atkinson, treasurer for the receivers, who stated that the plan has been declared operative, whereby the principal payment of these obligations will be extended for three years. The receivers filed a petition and an order was entered in the federal district court at St. Louis. Of $10,860,000 certificates outstanding which are affected by the plan; assents covering 96.38 per cent have been received. The court order provides that interest may be paid only to certificate holders who have assented to the plan.

WESTERN PACIFIC.—*R. F. C. Loan.*—This company has applied to the Reconstruction Finance Corporation for a loan of $1,000,000 to meet the semi-annual interest on its outstanding first mortgage 5 per cent bonds.

Average Prices of Stocks and of Bonds

	Aug. 1	Last week	Last year
Average price of 20 representative railway stocks..	43.85	44.49	16.82
Average price of 20 representative railway bonds..	73.12	72.80	57.10

Dividends Declared

Hartford & Connecticut Western. — $1.00, semi-annually, payable August 31 to holders of record August 21.

Louisiana & Missouri River.—7 Percent Guaranteed Preferred, $3.50, semi-annually, payable August 1 to holders of record July 19.

Oswego & Syracuse. — $2.25, semi-annually, payable August 21 to holders of record August 8.

Shamokin Valley & Pottsville.—$1.50, semi-annually, payable August 1 to holders of record July 24.

Syracuse Binghamton & N. Y.—$3.00, quarterly, payable August 1 to holders of record July 22.

Railway Officers

EXECUTIVE

George C. Smith, general traffic manager of the Missouri-Kansas-Texas, with headquarters at St. Louis, Mo., has been promoted to assistant to the president, with the same headquarters. Mr. Smith will continue to devote a major portion of his time to traffic matters. The position of general traffic manager has been abolished. Mr. Smith was born at New-

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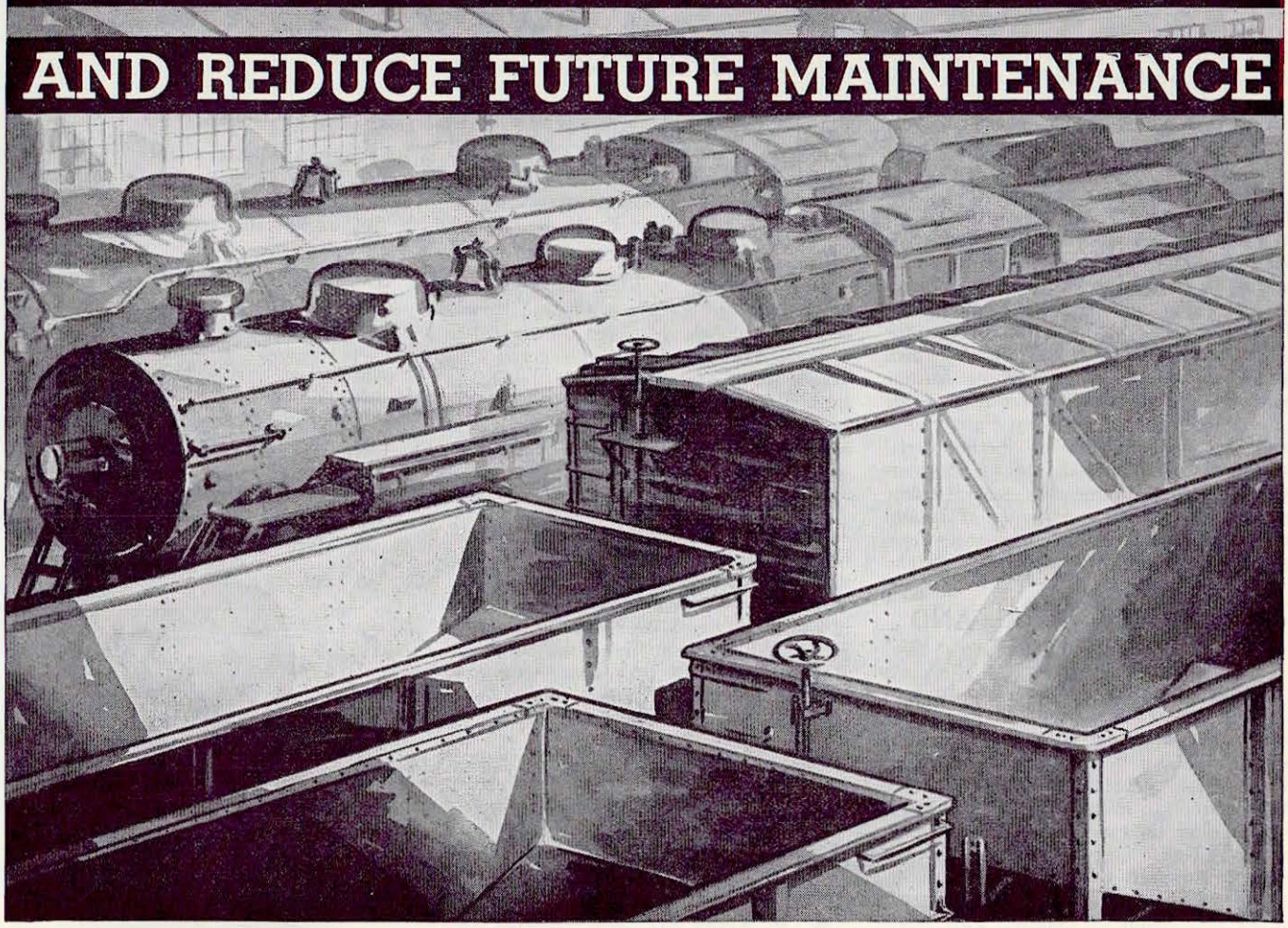
REPAIR WITH MODERN MATERIALS AND REDUCE FUTURE MAINTENANCE



Deferred maintenance is steadily growing by millions of dollars. It cannot be avoided much longer. » » But its ultimate cost can be kept to a minimum by use of modern materials that reduce wear, breakage and the inroads of rust and corrosion. » » In repairing freight cars, use Toncan Iron sheets and thus obtain an added protection against rust and corrosion that will lower future maintenance. » » Wear-resisting steels; alloy steels of greater toughness and higher tensile strength; steels that withstand the higher stresses of modern motive power—such materials should be used for replacements. » » These and many other special alloy irons and steels have been developed by metallurgists of Republic Steel Corporation to help you keep down maintenance expense. Make full use of them in your repair program.

Toncan Iron Boiler Tubes, Pipe, Plates, Culverts, Rivets, Staybolts, Tender Plates and Firebox Sheets • Sheets and Strip for special railroad purposes • Agathon Alloy Steels for Locomotive Parts • Agathon Engine Bolt Steel • Agathon Iron for pins and bushings • Agathon Staybolt Iron • Climax Steel Staybolts • Upson Bolts and Nuts • Track Material, Maney Guard Rail Assemblies • Enduro Stainless Steel for dining car equipment, for refrigeration cars and for firebox sheets • Agathon Nickel Forging Steel.

The Birdsboro Steel Foundry & Machine Company of Birdsboro, Pa. has manufactured and is prepared to supply under license, Toncan Copper Molybdenum Iron castings for locomotives.

CENTRAL ALLOY DIVISION, MASSILLON, OHIO

AGATHON STEELS

REPUBLIC STEEL CORPORATION

GENERAL OFFICES YOUNGSTOWN, OHIO

TONCAN COPPER MO-LYB-DEN-UM IRON

ton, Kan., in 1887, and at the age of 14 years obtained his first railroad experience as a platform clerk with the Wells Fargo Express Company at Norman, Okla. He graduated from the University of Oklahoma at the age of 21 years and then continued his academic studies at the University of Wisconsin and Cornell University. Later he became a member of the faculty at Cornell University, teaching business organization and management, corporation finance, advertising and selling. In 1913 he entered the service of the Baltimore & Ohio's traffic department, specializing in research work designed to stimulate traffic in connection with the reorganization of the road's industrial department. In 1919 he formed an industrial bureau for the Baltimore (Md.) board of trade, which he directed until 1923 when he became executive assistant to the president of the Canton Railroad in that city. Mr. Smith was appointed director of the industrial bureau of the Industrial Club of St. Louis in 1927, his appointment as general traffic manager of the Katy in charge of freight and passenger traffic and industrial development becoming effective on April 1, 1931.

FINANCIAL, LEGAL AND ACCOUNTING

Andrew H. Kiskaddon, assistant general solicitor of the St. Louis Southwestern, with headquarters at St. Louis, Mo., has been promoted to general solicitor in charge of the legal department, with the same headquarters, to succeed **John R. Turney,** vice-president in charge of traffic and law, who resigned to accept a position with the Federal Railroad Co-ordinator in Washington. **B. F. Batts,** assistant general attorney and commerce counsel, with headquarters at St. Louis, has been promoted to general attorney and commerce counsel; **Adair Dyer,** assistant general attorney, has been promoted to general attorney; and **Carleton S. Hadley,** assistant attorney, has been promoted to assistant general attorney. Mr. Kiskaddon was born on April

Andrew H. Kiskaddon

15, 1884 in Franklin county, Mo., and graduated from the University of Missouri in 1910. Prior to coming to the Cotton Belt on May 1, 1920, as assistant attorney, Mr. Kiskaddon was first assistant prosecuting attorney of St. Louis county. On August 1, 1922, he became assistant general solicitor for the Cotton Belt, in which capacity he served until his promotion to general solicitor.

OPERATING

J. L. Webb, superintendent of stations and transfers of the central region of the Pennsylvania, at Pittsburgh, Pa., has been transferred, in the same capacity, to the eastern region with headquarters at Philadelphia, Pa., succeeding **F. W. B. Humes,** transferred.

J. S. Bassett, assistant superintendent of the Missouri Pacific, with headquarters at McGehee, Ark., has been transferred to Wynne, Ark., and has been succeeded by **W. Wicker,** assistant superintendent at Little Rock, Ark., who has been succeeded by **M. F. Weeks,** assistant superintendent at Alexandria, La., who in turn has been succeeded by **J. S. Walker.**

E. H. Bannon, superintendent of the Twin Cities Terminals division of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Minneapolis, Minn., has been transferred to Milwaukee, Wis., in charge of the Milwaukee Terminal division and has been succeeded by **D. T. Bagnell,** assistant superintendent of the Chicago Terminals division, who has been succeeded by **A. T. Berg.**

TRAFFIC

J. H. Christy, general dairy agent of the Delaware, Lackawanna & Western, has been appointed assistant western traffic manager, with headquarters at Chicago, Ill.

W. P. Ayers has been appointed general agent of the Virginian Railway with headquarters at Roanoke, Va., succeeding **E. H. Birchfield,** deceased.

MECHANICAL

W. M. English has been appointed acting superintendent of motive power of the Chicago, Indianapolis & Louisville, with headquarters at Lafayette, Ind., succeeding **W. A. Callison,** deceased.

PURCHASES AND STORES

M. H. McGlynn, chief clerk in the fuel department of the Chicago, Rock Island & Pacific, has been promoted to fuel agent, with headquarters as before at Chicago, to succeed **C. T. Winkless,** deceased.

ENGINEERING AND SIGNALING

W. H. Courtenay has been appointed consulting engineer of the Louisville & Nashville and **G. R. Smiley,** assistant chief engineer has been appointed to succeed Mr. Courtenay as chief engineer. Both will have headquarters at Louisville, Ky., as before.

G. J. Adamson, division engineer of the Union Pacific, with headquarters at Kansas City, Mo., has been promoted to chief engineer, to succeed **Lem Adams** who has resigned to become chief engineer of the Oxweld Railroad Service Company, Chicago, and will be succeeded by **L. J. Hammond,** roadmaster, with headquarters at Salina, Kan.

OBITUARY

Frederick T. Slack, formerly superintendent of the Hudson division of the New York Central, died on August 1, at Beacon, N. Y., as a result of an automobile accident.

Owen D. Kinsey, formerly tool foreman of the Illinois Central, supervisor of tools in the locomotive and car department of the Chicago, Milwaukee, St. Paul & Pacific and past-president of the American Railway Tool Foremen's Association, died on July 14 in Harvey, Ill.

Earl Herbert Pudney, electrical engineer, Atlanta, Birmingham & Coast, whose death was noted in the July 29 issue of the *Railway Age*, was born at Sterling, Ill., on March 24, 1878. He received his

Earl Herbert Pudney

early education in Sherburne, N. Y., following which he took a course in engineering in New York City. After being mustered out of service in the U. S. Army in the Philippines, he entered railway service in May, 1901, with the N. Y. Ontario & Western where he served respectively as a mason, trackwalker, batteryman, signal maintainer, interlocking repairman, signal construction foreman and maintenance foreman. In May, 1913, he entered the service of the General Railway Signal Company as construction foreman, and in 1914 held the same position with the Atlanta Terminal Company. In May, 1916, he was appointed general signal construction foreman for the Atlanta & West Point, subsequent to which he was made supervisor of signals in May, 1917, and signal engineer in October, 1917. During government control he was signal engineer of the Atlanta, Birmingham & Atlantic, the Georgia Railroad, the Atlanta Terminal Company and the Atlanta & West Point. In 1920 he was appointed signal and electrical engineer of the Atlanta, Birmingham & Atlantic, now the Atlanta, Birmingham & Coast, with headquarters at Atlanta, Ga., which position he held up to the time of his death.

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RECORDS in the offices of the Supt. of Motive Power, Purchasing Agent, Master Mechanic, Fuel Supervisor and Foremen in the shops and roundhouses show the savings effected by the use of HUNT-SPILLER *Air Furnace* GUN IRON Wearing Parts.

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Complete
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to Advertisers
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page 30

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PITTSBURGH, PA.

Details of our products appeared in the following issues of Railway Age during 1931, 1932 & 1933:
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Offices in all principal cities

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Non-Display "Employment" Ads five cents a word. Count address in figuring cost. Box number requires ten words. All other classified Ads $4.00 an inch (1" x 1⅝") an insertion. Payable in advance. Railway Age, 30 Church St., New York, N. Y.

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Use space in this section

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SALARIED POSITIONS $2,500 to $25,000—This thoroughly organized advertising service of 23 years' recognized standing and reputation carries on preliminary negotiations for positions of the caliber indicated, through a procedure individualized to each client's personal requirements. Several weeks are required to negotiate and each individual must finance the moderate cost of his own campaign. Retaining fee protected by a refund provision as stipulated in our agreement. Identity is covered and, if employed, present position protected. If you have actually earned over $2,500, send only name and address for details.

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THE Railway Educational Bureau, Omaha, Neb., offers a distinctive education service for Supervisors and other employes. Write for FREE Special Bulletin.

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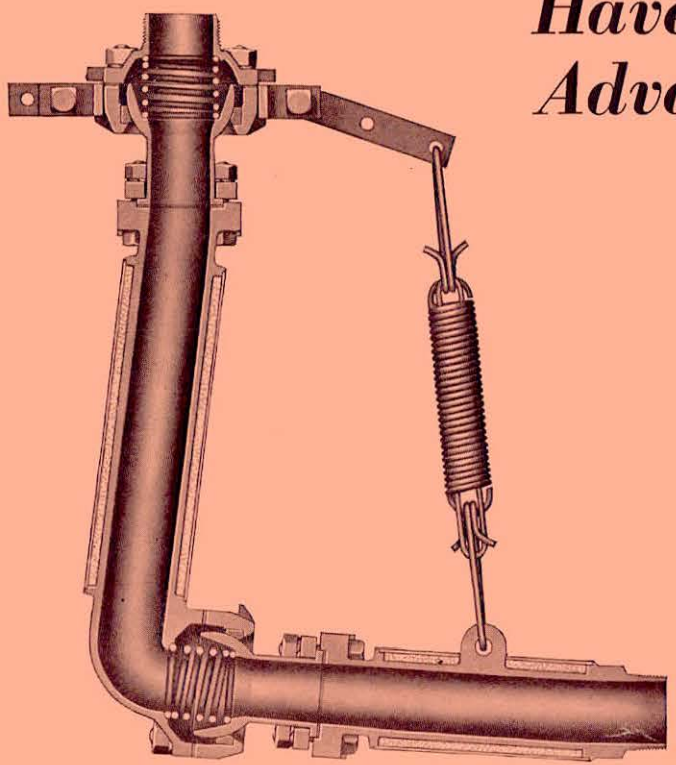
BARCO

STEAM HEAT CONNECTIONS



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THESE advantages, exclusively BARCO, offer every railroad, operating passenger trains, unusual savings in the maintenance of equipment.

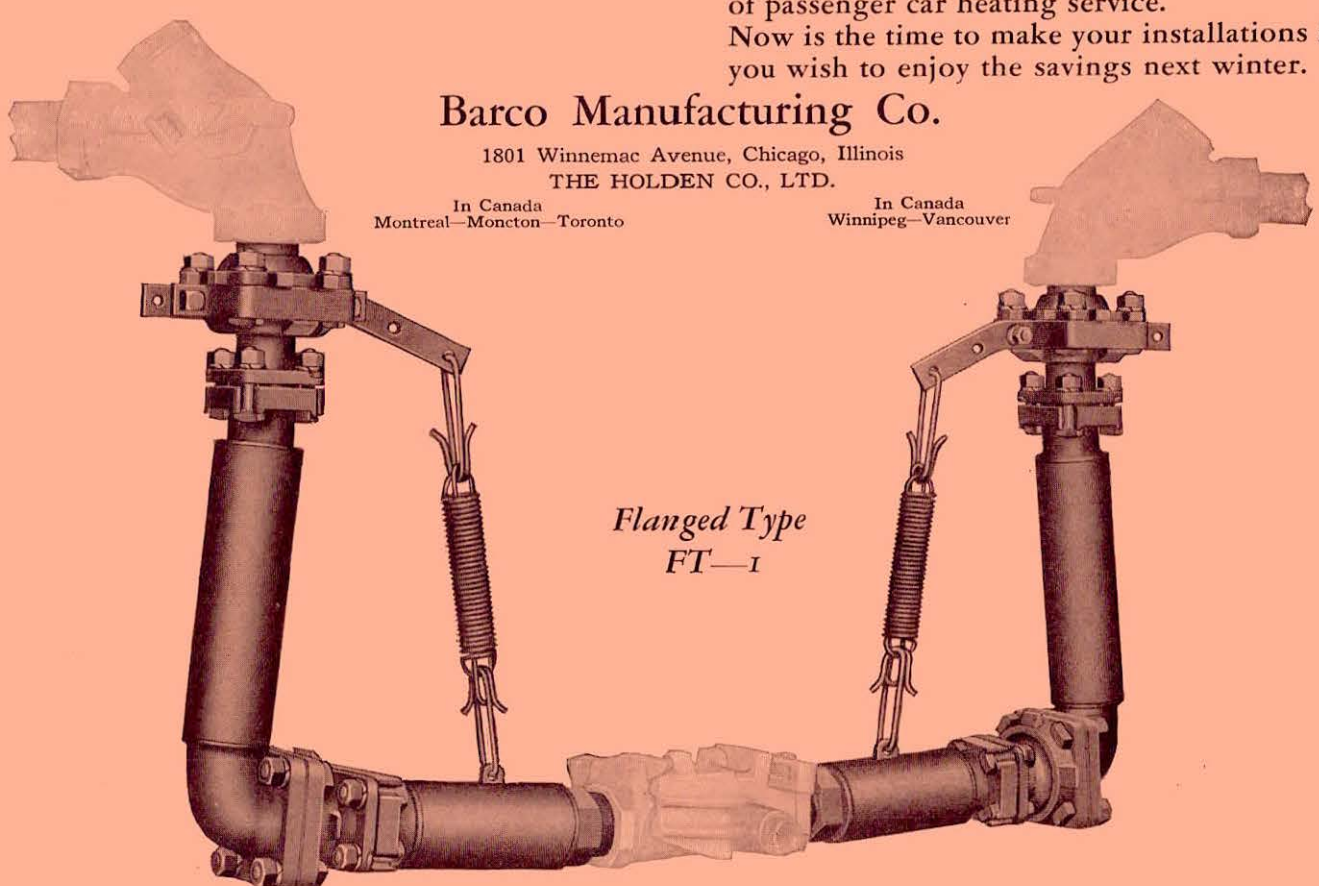
All parts of the BARCO connection are bolted together — removal or replacement of any part is a simple job, easily accomplished under the car or in the shop.

Hardened, forged, alloy steel metal wearing parts with long life, BARCO Gaskets flex under minimum friction, thus insuring extremely low cost of maintenance.

Ample, unrestricted area with only one 90° bend insures maximum delivery of steam without loss in pressure.

Steam tight performance without repairs or attention during the steam heat season is one of the most outstanding BARCO features contributing to the efficiency and economy of passenger car heating service.

Now is the time to make your installations if you wish to enjoy the savings next winter.



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No More Trouble

To the Editor:

In reply to "Foreman" in the January issue about cotter keys. The use of Cooke pins and cotters where pins are used would put an end to all cotter-key troubles.

A Reader.

Cotter and Split Keys

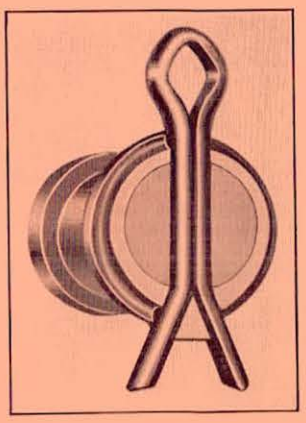
To the Editor:

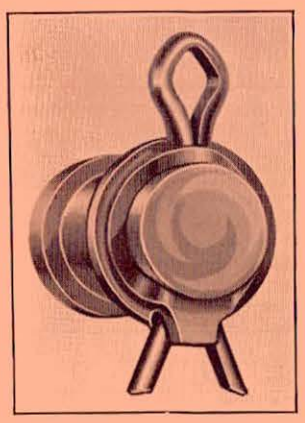
With the advent of winter, car-department men, particularly those in the northern section of the United States and in Canada, are again faced with several extra worries incidental to, and to a certain extent inseparable from, cold-weather conditions. Not the least among these extra cares is trouble with foundation-brake gears, including the dropping of brake beams, largely caused by the failures of cotters and split keys in brake-hanger pins. These failures usually result in a vigorous campaign of brake maintenance. But, unfortunately, the benefit derived from such belated attention does not give immediate relief from the trouble.

The procedure necessary to insure the best results is an intensive all-year program, particularly when cars are on repair tracks, of careful inspection of all split [illegible] due to over-bending, and fail, with the result that the key will work out. The same danger exists when both wings of a key are over-bent. Furthermore, such keys are more difficult to remove, and if re-applied after such removal, they are likely to fail. False economy is too often practiced in the reclaiming and re-using of cotter and split keys, and their re-use is justified only when they are in first-class condition. Flat split keys made of thin, easily-bent material, should not be used in brake rigging.

Car Foreman.

NO MORE TROUBLE if Westinghouse-Cooke Cotter Pins are used





THIS device—comprising collar and cotter—can be used on any standard brake pin . . . It is easily applied—collar slipped over pin, cotter inserted, given a few sharp taps with a hammer, its prongs automatically spread and doubly lock. No amount of vibration can loosen it . . . Cotter is easily driven out, is not distorted, and can be used time and again . . . . . .

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